

# **Chronic Toxicity Testing of the Splitter Box and Pre-Poso Creek Effluents**

Samples collected September 21, 2009

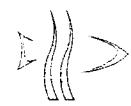
Prepared For:

Chevron ETC  
3901 Briarpark BRP 405  
Houston, TX 77042

Prepared By:

Pacific EcoRisk  
2250 Cordelia Road  
Fairfield, CA 94534

October 2009

 PACIFIC ECORISK  
ENVIRONMENTAL CONSULTANTS

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## 1. INTRODUCTION

Chevron ETC has contracted Pacific EcoRisk (PER) to perform NPDES compliance evaluations of the chronic toxicity of Chevron USA Inc. and Cawelo Water District (Chevron/Cawelo) effluent as well as the chronic toxicity of effluents from nearby discharges. The current evaluation is for two of those nearby discharges: Splitter Box effluent and Pre-Poso Creek effluent. The evaluations for these two effluent samples consisted of performing the following US EPA freshwater chronic toxicity tests:

- 3-brood (6-8-day) survival and reproduction test with the crustacean *Ceriodaphnia dubia*; and
- 7-day survival and growth test with larval fathead minnows (*Pimephales promelas*).

In order to assess the sensitivity of the test organisms to chronic toxic stress, reference toxicant tests were also performed. This report describes the performance and results of these effluent and reference toxicant tests.

## 2. TOXICITY TEST PROCEDURES

The methods used in conducting these tests followed EPA testing manual "Short-Term Methods for Estimating the Chronic Effects of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

### 2.1 Sample Receipt and Handling

On September 21, Precision Analytical staff collected effluent samples into an appropriately cleaned sample containers. These samples were transported by courier, on ice and under chain-of-custody, to the PER laboratory in Fairfield. Upon receipt at the testing laboratory, aliquots of the samples were collected for analysis of initial water quality characteristics (Table 1), with the remainder of the samples being stored at 0-6°C except when being used to prepare test solutions. The chain-of-custody records for the collection and delivery of these samples are provided in Appendix A.

Table 1. Initial water quality characteristics of the Splitter Box and Pre-Poso Creek effluent samples.

| Sample Receipt Date | Sample ID | Temp (°C) | pH   | D.O. (mg/L) | Alkalinity (mg/L) | Hardness (mg/L) | Conductivity (µS/cm) | Total Ammonia (mg/L N) |
|---------------------|-----------|-----------|------|-------------|-------------------|-----------------|----------------------|------------------------|
| 9/21/09             | #2        | 2.9       | 7.17 | 6.1         | 140               | 57              | 564                  | <1.0                   |
| 9/21/09             | #3        | 4.3       | 7.28 | 6.4         | 120               | 59              | 454                  | <1.0                   |

Sample #2 = the Splitter Box effluent sample; Sample #3 = the pre-Poso Creek sample.

## 2.2 Survival and Reproduction Toxicity Testing with *Ceriodaphnia dubia*

The short-term chronic *Ceriodaphnia* test consists of exposing individual females to effluent for the length of time it takes for the Lab Control treatment females to produce 3 broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in this test are described below.

The Lab Water Control treatment for these tests consisted of a mixture of de-ionized water and a commercial spring water (Perrier). The Lab Water and the effluent samples were used to prepare test solutions at the 12.5, 25, 50, 75, and 100% effluent concentrations for each effluent. For each treatment, 200 mL of test solution was amended with the alga *Selenastrum capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) to provide food for the test organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in this test. Each day of the tests, fresh test solutions and a "new" set of replicate cups were prepared and characterized, as before.

There were 10 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. These "3-brood" tests were initiated by allocating one neonate (<24 hrs old) *Ceriodaphnia*, obtained from ongoing laboratory cultures, into each replicate. The replicate cups were placed into a temperature-controlled room at 25°C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Each test replicate cup was examined daily, with surviving "original" individual organisms being transferred to the corresponding new cup containing fresh test solution. The contents of each remaining "old" replicate cup were carefully examined, and the number of neonate offspring produced by each original organism was determined, after which "old" water quality characteristics (pH, D.O., and conductivity) were measured for the "old" media from one randomly-selected replicate at each treatment.

After it was determined that ≥ 60% of the *Ceriodaphnia* in the Lab Water Control treatment had produced their third brood of offspring, the tests were terminated. The resulting survival and reproduction (number of offspring) data were analyzed to evaluate any impairment(s) caused by the effluents; all statistical analyses were performed using the CETIS® statistical software.

### 2.2.1 Reference Toxicant Testing of the *Ceriodaphnia dubia*

In order to assess the sensitivity of the *Ceriodaphnia* test organisms to toxic stress, a reference toxicant test was performed. The reference toxicant test was performed similarly to the effluent tests except that test solutions consisted of Lab Control water spiked with NaCl at test concentrations of 250, 500, 1000, 1500 and 2000 mg/L. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., EC<sub>50</sub>); all statistical analyses were made using the CETIS® software. These response endpoints were then compared



to the typical response range established by the mean  $\pm$  2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

### 2.3 Survival and Growth Toxicity Testing with Larval Fathead Minnows

The chronic fathead minnow test consists of exposing larval fish to effluent for 7 days, after which effects on survival and growth are evaluated. The specific procedures used in this test are described below.

The Lab Water Control for these tests consisted of US EPA synthetic moderately-hard water. The Lab Water and the effluent samples were used to prepare test solutions at the 12.5, 25, 50, 75, and 100% effluent concentrations for each effluent. Fresh test solutions were prepared daily. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the tests.

There were 4 replicates at each test treatment, each replicate consisting of 400 mL of test media in a 600-mL glass beaker. These tests were initiated by randomly allocating 10 larval fathead minnows (<48 hrs old) into each replicate. The replicate beakers were placed in a temperature-controlled room at 25°C, under cool-white fluorescent lighting on a 16L:8D photoperiod. The test fish were fed brine shrimp nauplii thrice daily.

Each replicate was examined daily, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined and then approximately 80% of the test media in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH, D.O., and conductivity) were measured on the old test water that had been discarded from one randomly-selected replicate at each treatment.

After 7 days exposure, the number of live fish in each replicate beaker was recorded. The fish from each replicate were then carefully euthanized in methanol, rinsed in de-ionized water, and transferred to a pre-dried and pre-tared weighing pan. These fish were then dried at 100°C for >24 hrs and re-weighed to determine the total weight of fish in each replicate; the total weight was then divided by the initial number of fish per replicate ( $n=10$ ) to determine the "biomass value". The resulting survival and growth ("biomass value") data were analyzed to evaluate any impairment(s) caused by the effluents; all statistical analyses were performed using the CETIS® statistical software.

#### 2.3.1 Reference Toxicant Testing of the Larval Fathead Minnows

In order to assess the sensitivity of the fish to toxic stress, a reference toxicant test was performed. The reference toxicant test was performed similarly to the effluent tests, except that test solutions consisted of Lab Control water spiked with NaCl at test concentrations of 0.75, 1.5, 3, 6, and 9 gm/L. The resulting test response data were analyzed to determine key dose-response

point estimates (e.g., EC<sub>50</sub>); all statistical analyses were made using the CETIS® software. These response endpoints were then compared to the 'typical response' ranges established by the mean  $\pm 2$  SD of the point estimates generated by the 20 most recent previous reference toxicant tests performed by this lab.

### 3. RESULTS

#### 3.1 Results of the Splitter Box Effluent Tests

##### 3.1.1 Chronic Effects of Splitter Box Effluent on *Ceriodaphnia dubia*

The results of this test are summarized below in Table 2. There was 100% survival at the Lab Water Control treatment. There were no significant reductions in survival in the effluent; the survival NOEC was 100% effluent, resulting in 1.0 TUc (where TUc = 100/NOEC).

There was a mean of 25.4 offspring per female at the Lab Water Control treatment. There was a significant reduction in reproduction in the 100% Splitter Box effluent; the reproduction NOEC was 75% effluent, resulting in 1.3 TUc (where TUc = 100/NOEC).

The test data and summary of statistical analyses for this test are presented in Appendix B.

Table 2. Effects of Splitter Box effluent on *Ceriodaphnia dubia* survival and reproduction.

| Effluent Treatment   | % Survival                  | Reproduction (# neonates /female) |
|--|-----------------------------|-----------------------------------|
| Lab Water Control  | 100                         | 25.4                              |
| 12.5%  | 100                         | 26.2                              |
| 25%  | 100                         | 24.7                              |
| 50%  | 100                         | 25.4                              |
| 75%  | 100                         | 22.7                              |
| 100%   | 90                          | 18.5*                             |
| <b>Summary of Statistics</b>                                 |                             |                                   |
| No Observable Effect Concentration (NOEC) =                  | 100% effluent               | 75% effluent                      |
| TUc (where TUc = 100/NOEC) =                                 | 1.0                         | 1.3                               |
| Survival EC <sub>25</sub> or Reproduction IC <sub>25</sub> = | >100% effluent <sup>a</sup> | 94.4% effluent                    |
| Survival EC <sub>50</sub> or Reproduction IC <sub>50</sub> = | >100% effluent <sup>a</sup> | >100% effluent                    |

\* Significantly less than the Control treatment response at p < 0.05.

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be assumed to be >100% effluent.

### 3.1.2 Chronic Effects of Splitter Box Effluent on Fathead Minnows

The results of this test are summarized below in Table 3. There was 100% survival at the Lab Water Control treatment. There were significant reductions in survival in the 75% and 100% Splitter Box effluent concentrations; the NOEC was 50% effluent, resulting in 2.0 TUC (where  $TUC = 100/NOEC$ ).

There was a mean 'biomass value' of 0.39 mg at the Lab Water Control treatment. The growth NOEC was also 50% effluent, resulting in 2.0 TUC (where  $TUC = 100/NOEC$ ).

The test data and the summary of statistical analyses for this test are presented in Appendix C.

Table 3. Effects of Splitter Box effluent on fathead minnow survival and growth.

| Effluent Treatment | % Survival | Mean Fish Biomass Value (mg) |
|--------------------|------------|------------------------------|
| Lab Water Control  | 100        | 0.39                         |
| 12.5%              | 97.5       | 0.36                         |
| 25%                | 92.5       | 0.36                         |
| 50%                | 92.5       | 0.33                         |
| 75%                | 60*        | 0.19                         |
| 100%               | 27.5*      | 0.06                         |

| Summary of Statistics                       |                |                |
|---|----------------|----------------|
| No Observable Effect Concentration (NOEC) = | 50% effluent   | 50% effluent   |
| TUC (where $TUC = 100/NOEC$ ) =             | 2.0            | 2.0            |
| Survival EC25 or Growth IC25 =              | 51.6% effluent | 56.6% effluent |
| Survival EC50 or Growth IC50 =              | 84.4% effluent | 74.7% effluent |

\* Significantly less than the Control treatment response at  $p < 0.05$ .

### 3.2 Results of the Pre-Poso Creek Effluent Tests

#### 3.2.1 Chronic Effects of Pre-Poso Creek Effluent on *Ceriodaphnia dubia*

The results of this test are summarized below in Table 4. There was 100% survival at the Lab Water Control treatment. There were no significant reductions in survival in the effluent; the survival NOEC was 100% effluent, resulting in 1.0 TUC (where TUC = 100/NOEC).

There was a mean of 23.2 offspring per female at the Lab Water Control treatment. There were no significant reductions in reproduction; the reproduction NOEC was 100% effluent, resulting in 1.0 TUC (where TUC = 100/NOEC).

The test data and summary of statistical analyses for this test are presented in Appendix D.

Table 4. Effects of Pre-Poso Creek effluent on *Ceriodaphnia dubia* survival and reproduction.

| Effluent Treatment                          | % Survival                  | Reproduction (# neonates /female) |
|---|-----------------------------|-----------------------------------|
| Lab Water Control                           | 100                         | 23.2                              |
| 12.5%                                       | 100                         | 25.9                              |
| 25%   | 100                         | 29.0                              |
| 50%   | 100                         | 26.2                              |
| 75%   | 100                         | 27.7                              |
| 100%  | 90                          | 21.8                              |
| <b>Summary of Statistics</b>                |                             |                                   |
| No Observable Effect Concentration (NOEC) = | 100% effluent               | 100% effluent                     |
| TUC (where TUC = 100/NOEC) =                | 1.0                         | 1.0                               |
| Survival EC25 or Reproduction IC25 =        | >100% effluent <sup>a</sup> | >100% effluent                    |
| Survival EC50 or Reproduction IC50 =        | >100% effluent <sup>a</sup> | >100% effluent                    |

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be assumed to be >100% effluent.

### 3.2.2 Chronic Effects of Pre-Poso Creek Effluent on Fathead Minnows

The results of this test are summarized below in Table 5. There was 92.5% survival at the Lab Water Control treatment. There was a significant reduction in survival in the 100% Pre-Poso Creek effluent; the NOEC was 75% effluent, resulting in 1.3 TUc (where TUc = 100/NOEC).

There was a mean 'biomass value' of 0.34 mg at the Lab Water Control treatment. There were significant reductions in growth in the >50% Pre-Poso Creek effluent treatments; the growth NOEC was 25% effluent, resulting in 4.0 TUc (where TUc = 100/NOEC).

The test data and the summary of statistical analyses for this test are presented in Appendix E.

Table 5. Effects of Pre-Poso Creek effluent on fathead minnow survival and growth.

| Effluent Treatment | % Survival   | Mean Fish Biomass Value (mg) |
|--------------------|--------------|------------------------------|
| Lab Water Control  | 92.5         | 0.34                         |
| 12.5%              | 96.9         | 0.34                         |
| 25%                | 90.0         | 0.33                         |
| 50%                | 87.5         | <b>0.26*</b>                 |
| 75%                | 75.0         | <b>0.16*</b>                 |
| 100%               | <b>40.0*</b> | 0.06                         |

| Summary of Statistics                                  |                |                |
|--|----------------|----------------|
| No Observable Effect Concentration (NOEC) =            | 75% effluent   | 25% effluent   |
| TUc (where TUc = 100/NOEC) =                           | 1.3            | 4.0            |
| Survival EC <sub>25</sub> or Growth IC <sub>25</sub> = | 77.1% effluent | 51.2% effluent |
| Survival EC <sub>50</sub> or Growth IC <sub>50</sub> = | 96% effluent   | 71.7% effluent |

\* Significantly less than the Control treatment response at p < 0.05.

### 3.3 Results of the Reference Toxicant Testing

#### 3.3.1 Reference Toxicant Toxicity to *Ceriodaphnia dubia*

The results of this test are summarized below in Table 6. There was 90% survival and a mean of 22.4 offspring in the Lab Control treatment. The survival EC<sub>50</sub> was 1730 mg/L NaCl, and the reproduction IC<sub>50</sub> was 993 mg/L NaCl.

These reference toxicant test results were consistent with the “typical response” ranges established by the mean  $\pm$  2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab, indicating that these test organisms were responding to toxic stress in a typical fashion.

The test data and summary of statistical analyses for this test are presented in Appendix E.

Table 6. Reference toxicant testing: effects of NaCl on *Ceriodaphnia dubia*.

| NaCl Treatment (mg/L)  | % Survival     | Reproduction (# neonates/female) |
|--|----------------|----------------------------------|
| Lab Control  | 90             | 22.4                             |
| 250  | 100            | 20.6                             |
| 500  | 100            | 21.3                             |
| 1000   | 90             | 11.1*                            |
| 1500   | 100            | 7.6*                             |
| 2000   | 0*             | 0.0                              |
| <b>Summary of Statistics</b>                                 |                |                                  |
| Survival EC <sub>50</sub> or Reproduction IC <sub>50</sub> = | 1730 mg/L NaCl | 993 mg/L NaCl                    |

\* Significantly less than the Lab Control treatment response ( $p < 0.05$ ).

### 3.3.2 Reference Toxicant Toxicity to Fathead Minnows

The results of this test are summarized below in Table 7. There was 75% survival and a mean biomass value of 0.25 mg at the Lab Control treatment. The survival EC<sub>50</sub> was 4.4 gm/L NaCl and the growth IC<sub>50</sub> was 3.8 gm/L NaCl.

These reference toxicant test results were consistent with the "typical response" ranges established by the mean  $\pm$  2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab, indicating that these test organisms were responding to toxic stress in a typical fashion.

The test data and summary of statistical analyses for this test are presented in Appendix G.

Table 7. Reference toxicant testing: effects of NaCl on fathead minnows.

| NaCl Treatment (gm/L) | % Survival | Mean Fish Biomass Value (mg) |
|-----------------------|------------|------------------------------|
| Lab Control           | 75         | 0.25                         |
| 0.75                  | 82.5       | 0.28                         |
| 1.5                   | 80         | 0.28                         |
| 3                     | 65         | 0.17*                        |
| 6                     | 17.5*      | 0.07                         |
| 9                     | 0*         | 0.0                          |

**Summary of Statistics**

|  |               |               |
|--|---------------|---------------|
| Survival EC <sub>50</sub> or Growth IC <sub>50</sub> = | 4.4 gm/L NaCl | 3.8 gm/L NaCl |
|--|---------------|---------------|

\* Significantly less than the Lab Control treatment response ( $p < 0.05$ ).

## 4. SUMMARY AND CONCLUSIONS

### **Chronic Effects of Splitter Box Effluent on *Ceriodaphnia dubia***

There were no significant reductions in survival in any of the Splitter Box effluent treatments; the NOEC was 100% effluent, resulting in 1.0 TUC. There was a significant reduction in reproduction in the 100% Splitter Box effluent; the NOEC was 75% effluent, resulting in 1.3 TUC.

### **Chronic Effects of Splitter Box Effluent on Fathead Minnows**

There were significant reductions in survival in the >75% Splitter Box effluent treatments; the NOEC was 50% effluent, resulting in 2.0 TUC. There were significant reductions in growth in the >75% Splitter Box effluent treatments; the NOEC was 50% effluent, resulting in 2.0 TUC.

### **Chronic Effects of Pre-Poso Creek Effluent on *Ceriodaphnia dubia***

There were no significant reductions in survival or reproduction in the Pre-Poso Creek effluent; the NOEC was 100% effluent for both endpoints.

### **Chronic Effects of Pre-Poso Creek Effluent on Fathead Minnows**

There was a significant reduction in survival in the 100% Pre-Poso Creek effluent treatment; the NOEC was 75% effluent, resulting in 1.3 TUC. There were significant reductions in growth in the >50% Splitter Box effluent treatments; the NOEC was 25% effluent, resulting in 4.0 TUC.

### **4.1 QA/QC Summary**

**Test Conditions** – Test conditions (pH, D.O., temperature, etc.) were all within acceptable limits for these tests. All analyses were performed according to laboratory Standard Operating Procedures.

**Negative Lab Control** – The biological responses in the Lab Water Control treatments for these tests were within acceptable limits.

**Positive Control** – The results for the reference toxicant tests were consistent with the reference toxicant test database, indicating that these test organisms were responding to toxic stress in a typical fashion.

**Concentration Response Relationships** – There were valid concentration-response relationships for the reference toxicant tests, which were determined to be acceptable for this testing.

## Appendix A

### Chain-of-Custody Records for the Collection and Delivery of the Splitter Box and Pre-Poso Creek Effluent Samples

**CHAIN OF CUSTODY RECORD**

**PACIFIC ECORISK**  
22250 Cordelia Rd  
Fairfield, CA 94534  
Ph: (707) 207-7760  
Fax: (707) 207-7916  
[www.pacificecorisk.com](http://www.pacificecorisk.com)

RESULTS TO:  
Attn: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

LTS TO:  
CYNTHIA GUNDE  
CHERYL ANN SETC

BILL TO:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Attn: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

L TO:  
CYNTHIA GULD  
COLVAN ET AL

PROJECT:

AMERICAN JOURNAL

**METHOD OF SHIPMENT:**   
**COMMENTS:**

CODES:

HAND: \_\_\_\_\_

| RELINQUISHED BY: (SIGNATURE) | DATE    | TIME | RECEIVED BY: (SIGNATURE) | DATE    | TIME | PAGE # |
|------------------------------|---------|------|--------------------------|---------|------|--------|
| <u>John C.</u>               | 9/21/09 | 1305 | <u>John C.</u>           | 9-21-09 | 1305 | OF     |
| <u>John C.</u>               | 9/21/09 | 1600 | <u>John C.</u>           | 9/21/09 | 1800 |        |

WHITE - RETURN W/ SAMPLE

**YELLOW - KEEP FOR YOUR RECORDS**

**CHAIN OF CUSTODY RECORD**

**PACIFIC ECORISK**  
22250 Cordelia Rd  
Fairfield, CA 94534  
Ph: (707) 207-7760  
Fax: (707) 207-7916  
[www.pacificecorisk.com](http://www.pacificecorisk.com)

## RESULTS TO:

22250 Cordelia Rd  
Fairfield, CA 94534  
Ph: (707) 207-7760  
Fax: (707) 207-7916  
[www.pacificcorisk.com](http://www.pacificcorisk.com)

TO:  
CYNTHIA GUDGEON  
etc

BILL TO: Cynthia Gould  
Chase & Son LLC

Attn: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

## PROJECT:

METHOD OF SHIPMENT:  
COMMENTS:

HAND: \_\_\_\_\_ OTHER: \_\_\_\_\_ CODES: \_\_\_\_\_

| RELINQUISHED BY: (SIGNATURE)   | DATE    | TIME | RECEIVED BY: (SIGNATURE)   | DATE    | TIME | PAGE # |
|--|---------|------|--|---------|------|--------|
|  | 9/21/09 | 1305 |  | 9/21/09 | 1305 | OF     |
|  | 9/21/09 | 1800 |  | 9/21/09 | 1800 |        |

## WHITE - RETURN W/ SAMPLE

**YELLOW - KEEP FOR YOUR RECORDS**

## Appendix B

### Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Splitter Box Effluent to *Ceriodaphnia dubia*

## CETIS Summary Report

Report Date: 22 Oct-09 12:02 (p 1 of 2)  
 Test Code: 21-0482-4751/36405

| Ceriodaphnia Survival and Reproduction Test |                 |                                       |                      |         |          |                  | Pacific EcoRisk                    |         |         |       |        |
|---|-----------------|---------------------------------------|----------------------|---------|----------|------------------|------------------------------------|---------|---------|-------|--------|
| Batch ID:                                   | 02-2832-3826    | Test Type: Reproduction-Survival (7d) |                      |         | Analyst: | Jason Walker     |                                    |         |         |       |        |
| Start Date:                                 | 22 Sep-09 16:30 | Protocol: EPA-821-R-02-013 (2002)     |                      |         | Diluent: | Laboratory Water |                                    |         |         |       |        |
| Ending Date:                                | 28 Sep-09 14:00 | Species: Ceriodaphnia dubia           |                      |         | Brine:   | Not Applicable   |                                    |         |         |       |        |
| Duration:                                   | 5d 22h          | Source: In-House Culture              |                      |         | Age:     | 1                |                                    |         |         |       |        |
| Sample ID:                                  | 18-5359-5522    | Code:                                 | Eff                  |         |          | Client:          | Precision Analytical               |         |         |       |        |
| Sample Date:                                | 21 Sep-09 08:15 | Material:                             | Effluent             |         |          | Project:         | 15239                              |         |         |       |        |
| Receive Date:                               | 21 Sep-09 18:00 | Source:                               | Precision Analytical |         |          |                  |                                    |         |         |       |        |
| Sample Age:                                 | 32h (2.9 °C)    | Station:                              | Splitter Box         |         |          |                  |                                    |         |         |       |        |
| Comparison Summary                          |                 |                                       |                      |         |          |                  |                                    |         |         |       |        |
| Analysis ID                                 | Endpoint        | NOEL                                  | LOEL                 | TOEL    | PMSD     | TU               | Method                             |         |         |       |        |
| 06-6382-3621                                | Reproduction    | 75                                    | 100                  | 86.6    | 15.9%    | 1.33             | Dunnett's Multiple Comparison Test |         |         |       |        |
| 05-2755-2679                                | Survival        | 100                                   | >100                 | N/A     | N/A      | 1                | Fisher Exact/Bonferroni-Holm Test  |         |         |       |        |
| Point Estimate Summary                      |                 |                                       |                      |         |          |                  |                                    |         |         |       |        |
| Analysis ID                                 | Endpoint        | Level                                 | %                    | 95% LCL | 95% UCL  | TU               | Method                             |         |         |       |        |
| 20-3126-1463                                | Reproduction    | IC5                                   | 54.9                 | 6.46    | 78.1     | 1.82             | Linear Interpolation (ICPIN)       |         |         |       |        |
|   |                 | IC10                                  | 68.6                 | 20.9    | 83.6     | 1.46             |                                    |         |         |       |        |
|   |                 | IC15                                  | 79.1                 | 58.2    | 97.3     | 1.26             |                                    |         |         |       |        |
|   |                 | IC20                                  | 86.4                 | 67.9    | N/A      | 1.16             |                                    |         |         |       |        |
|   |                 | IC25                                  | 94.4                 | 77.5    | N/A      | 1.06             |                                    |         |         |       |        |
|   |                 | IC40                                  | >100                 | N/A     | N/A      | <1               |                                    |         |         |       |        |
|   |                 | IC50                                  | >100                 | N/A     | N/A      | <1               |                                    |         |         |       |        |
| Reproduction Summary                        |                 |                                       |                      |         |          |                  |                                    |         |         |       |        |
| Conc-%                                      | Control Type    | Count                                 | Mean                 | 95% LCL | 95% UCL  | Min              | Max                                | Std Err | Std Dev | CV%   | Diff%  |
| 0   | Lab Water Contr | 10                                    | 25.4                 | 24      | 26.8     | 20               | 31                                 | 0.679   | 3.72    | 14.6% | 0.0%   |
| 12.5  |                 | 10                                    | 26.2                 | 25.2    | 27.2     | 22               | 30                                 | 0.478   | 2.62    | 9.99% | -3.15% |
| 25  |                 | 10                                    | 24.7                 | 23.8    | 25.6     | 22               | 29                                 | 0.422   | 2.31    | 9.36% | 2.76%  |
| 50  |                 | 10                                    | 25.4                 | 24.2    | 26.6     | 20               | 30                                 | 0.591   | 3.24    | 12.8% | 0.0%   |
| 75  |                 | 10                                    | 22.7                 | 21      | 24.4     | 16               | 30                                 | 0.808   | 4.42    | 19.5% | 10.6%  |
| 100   |                 | 10                                    | 18.5                 | 16.2    | 20.8     | 6                | 30                                 | 1.12    | 6.13    | 33.2% | 27.2%  |
| Survival Summary                            |                 |                                       |                      |         |          |                  |                                    |         |         |       |        |
| Conc-%                                      | Control Type    | Count                                 | Mean                 | 95% LCL | 95% UCL  | Min              | Max                                | Std Err | Std Dev | CV%   | Diff%  |
| 0   | Lab Water Contr | 10                                    | 1                    | 1       | 1        | 1                | 1                                  | 0       | 0       | 0.0%  | 0.0%   |
| 12.5  |                 | 10                                    | 1                    | 1       | 1        | 1                | 1                                  | 0       | 0       | 0.0%  | 0.0%   |
| 25  |                 | 10                                    | 1                    | 1       | 1        | 1                | 1                                  | 0       | 0       | 0.0%  | 0.0%   |
| 50  |                 | 10                                    | 1                    | 1       | 1        | 1                | 1                                  | 0       | 0       | 0.0%  | 0.0%   |
| 75  |                 | 10                                    | 1                    | 1       | 1        | 1                | 1                                  | 0       | 0       | 0.0%  | 0.0%   |
| 100   |                 | 10                                    | 0.9                  | 0.782   | 1        | 0                | 1                                  | 0.0577  | 0.316   | 35.1% | 10.0%  |

**CETIS Summary Report**

Report Date:

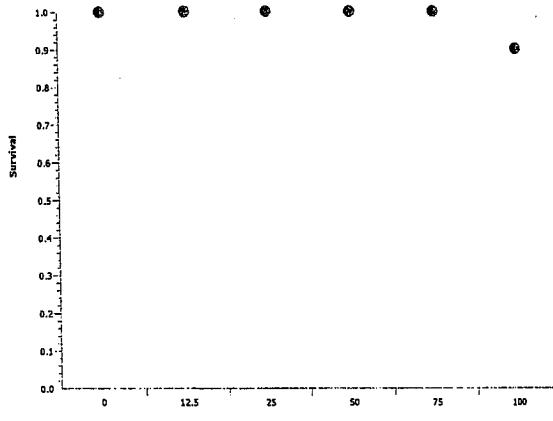
22 Oct-09 12:02 (p 2 of 2)

Test Code:

21-0482-4751/36405

| Ceriodaphnia Survival and Reproduction Test |                 |       |       |       |       |       |       |       |       |       | Pacific EcoRisk |
|---|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| Reproduction Detail                         |                 |       |       |       |       |       |       |       |       |       |                 |
| Conc-%                                      | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10          |
| 0   | Lab Water Contr | 22    | 22    | 25    | 23    | 26    | 29    | 30    | 26    | 31    | 20              |
| 12.5  |                 | 24    | 27    | 25    | 27    | 30    | 29    | 22    | 23    | 28    | 27              |
| 25  |                 | 27    | 22    | 25    | 24    | 22    | 29    | 24    | 24    | 23    | 27              |
| 50  |                 | 25    | 20    | 27    | 25    | 25    | 25    | 26    | 21    | 30    | 30              |
| 75  |                 | 21    | 19    | 21    | 18    | 24    | 26    | 30    | 16    | 25    | 27              |
| 100   |                 | 15    | 17    | 18    | 22    | 18    | 23    | 30    | 19    | 17    | 6               |
| Survival Detail                             |                 |       |       |       |       |       |       |       |       |       |                 |
| Conc-%                                      | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10          |
| 0   | Lab Water Contr | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 12.5  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 25  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 50  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 75  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 100   |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 0               |

**CETIS Analytical Report**Report Date: 22 Oct-09 12:02 (p 1 of 1)  
Test Code: 21-0482-4751/36405

| Ceriodaphnia Survival and Reproduction Test  |                 |           |                            |         |                        |      | Pacific EcoRisk            |
|--|-----------------|-----------|----------------------------|---------|------------------------|------|----------------------------|
| Analysis ID:   | 05-2755-2679    | Endpoint: | Survival                   |         |                        |      | CETIS Version: CETISv1.7.0 |
| Analyzed:  | 22 Oct-09 12:01 | Analysis: | STP 2x2 Contingency Tables |         |                        |      | Official Results: Yes      |
| Data Transform   | Zeta            | Alt Hyp   | Monte Carlo                | NOEL    | LOEL                   | TOEL | TU                         |
| Untransformed  |                 | C > T     | Not Run                    | 100     | >100                   | N/A  | 1                          |
| Fisher Exact/Bonferroni-Holm Test  |                 |           |                            |         |                        |      |                            |
| Control  | vs              | Conc-%    | Test Stat                  | P-Value | Decision(0.05)         |      |                            |
| Lab Water Control  |                 | 12.5      | 1                          | 1.0000  | Non-Significant Effect |      |                            |
|  |                 | 25        | 1                          | 1.0000  | Non-Significant Effect |      |                            |
|  |                 | 50        | 1                          | 1.0000  | Non-Significant Effect |      |                            |
|  |                 | 75        | 1                          | 1.0000  | Non-Significant Effect |      |                            |
|  |                 | 100       | 0.5                        | 1.0000  | Non-Significant Effect |      |                            |
| Data Summary   |                 |           |                            |         |                        |      |                            |
| Conc-%   | Control Type    | No-Resp   | Resp                       | Total   |                        |      |                            |
| 0  | Lab Water Cont  | 10        | 0                          | 10      |                        |      |                            |
| 12.5   |                 | 10        | 0                          | 10      |                        |      |                            |
| 25   |                 | 10        | 0                          | 10      |                        |      |                            |
| 50   |                 | 10        | 0                          | 10      |                        |      |                            |
| 75   |                 | 10        | 0                          | 10      |                        |      |                            |
| 100  |                 | 9         | 1                          | 10      |                        |      |                            |
| Graphics   |                 |           |                            |         |                        |      |                            |
|  |                 |           |                            |         |                        |      |                            |

## CETIS Analytical Report

Report Date: 22 Oct-09 12:02 (p 1 of 1)  
Test Code: 21-0482-4751/36405

| Ceriodaphnia Survival and Reproduction Test |                               |  |             |          |                            |                     | Pacific EcoRisk        |                    |         |       |        |
|---|-------------------------------|--|-------------|----------|----------------------------|---------------------|------------------------|--------------------|---------|-------|--------|
| Analysis ID:                                | 06-6382-3621                  | Endpoint: Reproduction                     |             |          | CETIS Version: CETISv1.7.0 |                     |                        |                    |         |       |        |
| Analyzed:                                   | 22 Oct-09 12:02               | Analysis: Parametric-Control vs Treatments |             |          | Official Results: Yes      |                     |                        |                    |         |       |        |
| Data Transform                              | Zeta                          | Alt Hyp                                    | Monte Carlo |          | NOEL                       | LOEL                | TOEL                   | TU                 | PMSD    |       |        |
| Untransformed                               | 0                             | C > T                                      | Not Run     |          | 75                         | 100                 | 86.6                   | 1.33               | 15.9%   |       |        |
| <b>Dunnett's Multiple Comparison Test</b>   |                               |  |             |          |                            |                     |                        |                    |         |       |        |
| Control                                     | vs                            | Conc-%                                     | Test Stat   | Critical | MSD                        | P-Value             | Decision(5%)           |                    |         |       |        |
| Lab Water Control                           |                               | 12.5                                       | -0.453      | 2.29     | 4.05                       | 0.9340              | Non-Significant Effect |                    |         |       |        |
|   |                               | 25   | 0.396       | 2.29     | 4.05                       | 0.6904              | Non-Significant Effect |                    |         |       |        |
|   |                               | 50   | 0           | 2.29     | 4.05                       | 0.8333              | Non-Significant Effect |                    |         |       |        |
|   |                               | 75   | 1.53        | 2.29     | 4.05                       | 0.2080              | Non-Significant Effect |                    |         |       |        |
|   |                               | 100*                                       | 3.9         | 2.29     | 4.05                       | 0.0006              | Significant Effect     |                    |         |       |        |
| <b>ANOVA Table</b>                          |                               |  |             |          |                            |                     |                        |                    |         |       |        |
| Source                                      | Sum Squares                   |  | Mean Square |          | DF                         | F Stat              | P-Value                | Decision(5%)       |         |       |        |
| Between                                     | 409.8833                      |  | 81.97667    |          | 5                          | 5.25                | 0.0005                 | Significant Effect |         |       |        |
| Error                                       | 843.1                         |  | 15.61296    |          | 54                         |                     |                        |                    |         |       |        |
| Total                                       | 1252.983                      |  | 97.58963    |          | 59                         |                     |                        |                    |         |       |        |
| <b>ANOVA Assumptions</b>                    |                               |  |             |          |                            |                     |                        |                    |         |       |        |
| Attribute                                   | Test                          |  | Test Stat   | Critical | P-Value                    | Decision(1%)        |                        |                    |         |       |        |
| Variances                                   | Bartlett Equality of Variance |  | 11.3        | 15.1     | 0.0455                     | Equal Variances     |                        |                    |         |       |        |
| Distribution                                | Shapiro-Wilk Normality        |  | 0.973       |          | 0.2056                     | Normal Distribution |                        |                    |         |       |        |
| <b>Reproduction Summary</b>                 |                               |  |             |          |                            |                     |                        |                    |         |       |        |
| Conc-%                                      | Control Type                  | Count                                      | Mean        | 95% LCL  | 95% UCL                    | Min                 | Max                    | Std Err            | Std Dev | CV%   | Diff%  |
| 0   | Lab Water Contr               | 10   | 25.4        | 24       | 26.8                       | 20                  | 31                     | 0.69               | 3.72    | 14.6% | 0.0%   |
| 12.5  |                               | 10   | 26.2        | 25.2     | 27.2                       | 22                  | 30                     | 0.486              | 2.62    | 9.99% | -3.15% |
| 25  |                               | 10   | 24.7        | 23.8     | 25.6                       | 22                  | 29                     | 0.429              | 2.31    | 9.36% | 2.76%  |
| 50  |                               | 10   | 25.4        | 24.2     | 26.6                       | 20                  | 30                     | 0.601              | 3.24    | 12.8% | 0.0%   |
| 75  |                               | 10   | 22.7        | 21       | 24.4                       | 16                  | 30                     | 0.821              | 4.42    | 19.5% | 10.6%  |
| 100   |                               | 10   | 18.5        | 16.2     | 20.8                       | 6                   | 30                     | 1.14               | 6.13    | 33.2% | 27.2%  |
| <b>Graphics</b>                             |                               |  |             |          |                            |                     |                        |                    |         |       |        |
|   |                               |  |             |          |                            |                     |                        |                    |         |       |        |

## CETIS Analytical Report

Report Date: 22 Oct-09 12:02 (p 1 of 1)  
 Test Code: 21-0482-4751/36405

| Ceriodaphnia Survival and Reproduction Test            |                   |         |  |   |                         | Pacific EcoRisk |         |       |        |       |       |        |
|--|-------------------|---------|--|---|-------------------------|-----------------|---------|-------|--------|-------|-------|--------|
| Analysis ID: 20-3126-1463<br>Analyzed: 22 Oct-09 12:01 |                   |         | Endpoint: Reproduction<br>Analysis: Linear Interpolation (ICPIN) | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                         |                 |         |       |        |       |       |        |
| <b>Linear Interpolation Options</b>                    |                   |         |  |   |                         |                 |         |       |        |       |       |        |
| X Transform  | Y Transform       | Seed    | Resamples  | Exp 95% CL  | Method                  |                 |         |       |        |       |       |        |
| Log(X+1)   | Linear            | 57951   | 200  | Yes   | Two-Point Interpolation |                 |         |       |        |       |       |        |
| <b>Point Estimates</b>                                 |                   |         |  |   |                         |                 |         |       |        |       |       |        |
| Level  | %                 | 95% LCL | 95% UCL  | TU  | 95% LCL                 | 95% UCL         |         |       |        |       |       |        |
| IC5  | 54.9              | 6.46    | 78.1   | 1.82  | 1.28                    | 15.5            |         |       |        |       |       |        |
| IC10   | 68.6              | 20.9    | 83.6   | 1.46  | 1.2                     | 4.78            |         |       |        |       |       |        |
| IC15   | 79.1              | 58.2    | 97.3   | 1.26  | 1.03                    | 1.72            |         |       |        |       |       |        |
| IC20   | 86.4              | 67.9    | N/A  | 1.16  | N/A                     | 1.47            |         |       |        |       |       |        |
| IC25   | 94.4              | 77.5    | N/A  | 1.06  | N/A                     | 1.29            |         |       |        |       |       |        |
| IC40   | >100              | N/A     | N/A  | <1  | N/A                     | N/A             |         |       |        |       |       |        |
| IC50   | >100              | N/A     | N/A  | <1  | N/A                     | N/A             |         |       |        |       |       |        |
| <b>Reproduction Summary</b>                            |                   |         | <b>Calculated Variate</b>  |   |                         |                 |         |       |        |       |       |        |
| Conc-%   | Control Type      | Count   | Mean   | Min   | Max                     | Std Err         | Std Dev | CV%   | Diff%  |       |       |        |
| 0  | Lab Water Contr   | 10      | 25.4   | 20  | 31                      | 0.679           | 3.72    | 14.6% | 0.0%   |       |       |        |
| 12.5   |                   | 10      | 26.2   | 22  | 30                      | 0.478           | 2.62    | 9.99% | -3.15% |       |       |        |
| 25   |                   | 10      | 24.7   | 22  | 29                      | 0.422           | 2.31    | 9.36% | 2.76%  |       |       |        |
| 50   |                   | 10      | 25.4   | 20  | 30                      | 0.591           | 3.24    | 12.8% | 0.0%   |       |       |        |
| 75   |                   | 10      | 22.7   | 16  | 30                      | 0.808           | 4.42    | 19.5% | 10.6%  |       |       |        |
| 100  |                   | 10      | 18.5   | 6   | 30                      | 1.12            | 6.13    | 33.2% | 27.2%  |       |       |        |
| <b>Reproduction Detail</b>                             |                   |         | Rep 1  | Rep 2   | Rep 3                   | Rep 4           | Rep 5   | Rep 6 | Rep 7  | Rep 8 | Rep 9 | Rep 10 |
| 0  | Lab Water Control | 22      | 22   | 25  | 23                      | 26              | 29      | 30    | 26     | 31    | 20    |        |
| 12.5   |                   | 24      | 27   | 25  | 27                      | 30              | 29      | 22    | 23     | 28    | 27    |        |
| 25   |                   | 27      | 22   | 25  | 24                      | 22              | 29      | 24    | 24     | 23    | 27    |        |
| 50   |                   | 25      | 20   | 27  | 25                      | 25              | 25      | 26    | 21     | 30    | 30    |        |
| 75   |                   | 21      | 19   | 21  | 18                      | 24              | 26      | 30    | 16     | 25    | 27    |        |
| 100  |                   | 15      | 17   | 18  | 22                      | 18              | 23      | 30    | 19     | 17    | 6     |        |
| <b>Graphics</b>  |                   |         |  |   |                         |                 |         |       |        |       |       |        |
|  |                   |         |  |   |                         |                 |         |       |        |       |       |        |

**Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data**Client: **Precision Analytical - Chevron Cawelo**

Material:

**Splitter Box**

Test Date:

**7/22/05**Project #: **15239**

Randomization:

**B1A2D1F**

Control Water:

**Lab Water (80:20)**Test ID: **36405**

Cond.

**Temp (°C)**

Survival / Reproduction

SIGN-OFF

| Day   | pH   | D.O. | New | Old | Cond.<br>( $\mu$ S/cm) | A    | B  | C  | D  | E  | F  | G  | H  | I  | J  |
|---|------|------|-----|-----|------------------------|------|----|----|----|----|----|----|----|----|----|
| 0   | 8.01 | 8.5  |     |     | 234                    | 25.7 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 1   | 8.23 | 8.45 | 9.4 | 8.3 | 239                    | 25.7 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 2   | 8.16 | 7.93 | 8.5 | 8.9 | 260                    | 25.7 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 3   | 7.26 | 8.32 | 8.0 | 7.2 | 229                    | 25.7 | 5  | 5  | 4  | 6  | 5  | 5  | 4  | 6  | 5  |
| 4   | 8.14 | 8.10 | 8.8 | 8.1 | 230                    | 15.1 | 0  | 0  | 8  | 0  | 0  | 0  | 0  | 0  | 0  |
| 5   | 7.01 | 8.27 | 8.8 | 9.1 | 240                    | 26.0 | 7  | 8  | 10 | 0  | 12 | 12 | 12 | 11 | 12 |
| 6   | 7.94 | 8.27 | 8.3 | 8.7 | 190                    | 25.9 | 10 | 9  | 11 | 9  | 12 | 13 | 13 | 14 | 13 |
| 7   |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| 8   |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| Total = <b>121 120 125 123 126 99 30 24 31 26</b> |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| Day   | pH   | D.O. | New | Old | Cond.<br>( $\mu$ S/cm) | A    | B  | C  | D  | E  | F  | G  | H  | I  | J  |
| 0   | 8.05 | 8.5  |     |     | 286                    | 0    | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 1   | 8.16 | 8.44 | 9.4 | 8.7 | 285                    | 0    | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 2   | 8.07 | 8.13 | 8.4 | 9.0 | 275                    | 0    | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| 3   | 8.19 | 8.32 | 8.0 | 7.1 | 272                    | 5    | 4  | 5  | 5  | 5  | 3  | 5  | 4  | 4  | 3  |
| 4   | 8.01 | 8.33 | 8.9 | 8.0 | 284                    | 0    | 0  | 0  | 8  | 0  | 10 | 1  | 0  | 0  | 0  |
| 5   | 7.92 | 8.32 | 8.0 | 9.1 | 274                    | 8    | 10 | 9  | 0  | 11 | 0  | 6  | 10 | 10 | 10 |
| 6   | 8.04 | 8.33 | 8.2 | 8.7 | 131                    | 11   | 12 | 12 | 14 | 14 | 10 | 12 | 13 | 11 | 11 |
| 7   |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| 8   |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| Total = <b>241 227 225 227 30 29 22 23 23 27</b>  |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| 12.5% Mean Neonates/Female = <b>26.0</b>          |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |
| ♦ Spotted around                                  |      |      |     |     |                        |      |    |    |    |    |    |    |    |    |    |

Lab Water Control

**Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data**Client: **Precision Analytical - Chevron Cawelo**

Material:

Splitter Box

Test Date: **2/22/09**Project #: **15239**Test ID: **36405**

Control Water:

Randomization: **B0A#D 44**

Lab Water (80:20)

| Survival / Reproduction      |      |      |                                   |         |     |    |    | SIGN-OFF |    |    |    |    |                             |
|------------------------------|------|------|-----------------------------------|---------|-----|----|----|----------|----|----|----|----|-----------------------------|
| Day                          | pH   | D.O. | Cond. ( $\mu\text{S}/\text{cm}$ ) | A       | B   | C  | D  | E        | F  | G  | H  | I  | J                           |
|                              | New  | Old  | New                               | Old     |     |    |    |          |    |    |    |    |                             |
| 0                            | 7.98 |      | 8.1                               | 317     | 0   | 0  | 0  | 0        | 0  | 0  | 0  | 0  | 0                           |
| 1                            | 8.01 | 8.46 | 9.10                              | 324     | 0   | 0  | 0  | 0        | 0  | 0  | 0  | 0  | 0                           |
| 2                            | 8.06 | 8.20 | 8.2                               | 317     | 0   | 0  | 0  | 0        | 0  | 0  | 0  | 0  | 0                           |
| 3                            | 8.13 | 8.36 | 7.9                               | 7.1     | 308 | 4  | 4  | 5        | 4  | 6  | 4  | 5  | 4                           |
| 4                            | 7.93 | 8.33 | 9.0                               | 8.0     | 322 | 0  | 0  | 8        | 0  | 0  | 0  | 0  | 0                           |
| 5                            | 7.90 | 8.31 | 9.0                               | 9.1     | 615 | 10 | 7  | 8        | 0  | 11 | 8  | 9  | 9                           |
| 6                            | 8.01 | 8.28 | 8.2                               | 8.3     | 282 | 13 | 11 | 13       | 12 | 12 | 10 | 10 | 12                          |
| 7                            |      |      |                                   |         |     |    |    |          |    |    |    |    |                             |
| 8                            |      |      |                                   |         |     |    |    |          |    |    |    |    |                             |
|                              |      |      |                                   | Total = | 27  | 22 | 25 | 24       | 29 | 24 | 23 | 27 | Mean Neonates/Female = 24.7 |
| Day                          | pH   | D.O. | Cond. ( $\mu\text{S}/\text{cm}$ ) | A       | B   | C  | D  | E        | F  | G  | H  | I  | J                           |
|                              | New  | Old  | New                               | Old     |     |    |    |          |    |    |    |    |                             |
| 0                            | 7.91 |      | 8.2                               | 392     | 0   | 0  | 0  | 0        | 0  | 0  | 0  | 0  | 0                           |
| 1                            | 7.98 | 8.49 | 9.1                               | 85      | 401 | 0  | 0  | 0        | 0  | 0  | 0  | 0  | 0                           |
| 2                            | 7.93 | 8.23 | 8.1                               | 8.3     | 392 | 0  | 0  | 0        | 0  | 0  | 0  | 0  | 0                           |
| 3                            | 8.01 | 8.92 | 7.7                               | 7.3     | 386 | 5  | 4  | 5        | 6  | 5  | 4  | 5  | 4                           |
| 4                            | 7.78 | 8.43 | 9.0                               | 9.1     | 394 | 0  | 0  | 0        | 1  | 0  | 0  | 0  | 1                           |
| 5                            | 7.91 | 8.37 | 9.1                               | 8.9     | 399 | 8  | 5  | 10       | 0  | 10 | 9  | 7  | 12                          |
| 6                            | 7.93 | 8.42 | 8.7                               | 8.3     | 374 | 12 | 11 | 12       | 10 | 10 | 11 | 12 | 15                          |
| 7                            |      |      |                                   |         |     |    |    |          |    |    |    |    |                             |
| 8                            |      |      |                                   |         |     |    |    |          |    |    |    |    |                             |
|                              |      |      |                                   | Total = | 15  | 10 | 27 | 25       | 25 | 26 | 21 | 30 | 30                          |
| Mean Neonates/Female = 25.41 |      |      |                                   |         |     |    |    |          |    |    |    |    |                             |

~~80% brood counted~~

**Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data**

Test Date:

9/22/05

Material: Splitter Box

Randomization: D0A#D16

Control Water:

Lab Water (80:20)

Client: Precision Analytical - Chevron Cawelo

Test ID: 36405

Project #: 15239

| Day    | Survival / Reproduction |      |     | SIGN-OFF |     |    |    |    |    |    |
|--------|-------------------------|------|-----|----------|-----|----|----|----|----|----|
|        | A                       | B    | C   | D        | E   | F  | G  | H  | I  | J  |
| 0      | 380                     | 8.1  | 465 | 0        | 0   | 0  | 0  | 0  | 0  | 0  |
| 1      | 7.94                    | 8.52 | 9.7 | 8.3      | 477 | 0  | 0  | 0  | 0  | 0  |
| 2      | 7.86                    | 8.31 | 8.1 | 8.2      | 463 | 0  | 0  | 0  | 0  | 0  |
| 3      | 7.93                    | 8.44 | 7.8 | 7.1      | 467 | 5  | 4  | 6  | 6  | 4  |
| 4      | 7.48                    | 8.40 | 9.1 | 8.0      | 477 | 0  | 0  | 5  | 0  | 0  |
| 5      | 9.78                    | 8.42 | 9.1 | 9.0      | 469 | 6  | 5  | 7  | 8  | 11 |
| 6      | 7.54                    | 8.44 | 9.0 | 8.2      | 459 | 10 | 10 | 7  | 11 | 13 |
| 7      |                         |      |     |          |     |    |    |    |    | 15 |
| 8      |                         |      |     |          |     |    |    |    |    |    |
| Total= | 21                      | 21   | 18  | 24       | 30  | 16 | 15 | 27 |    |    |

Mean Neonates/Female = 23.727

| Day    | Survival / Reproduction |      |     | SIGN-OFF |      |    |    |    |    |   |
|--------|-------------------------|------|-----|----------|------|----|----|----|----|---|
|        | A                       | B    | C   | D        | E    | F  | G  | H  | I  | J |
| 0      | 7.74                    | 8.1  | 543 | 0        | 0    | 0  | 0  | 0  | 0  | 0 |
| 1      | 7.84                    | 8.57 | 9.9 | 8.3      | 550  | 0  | 0  | 0  | 0  | 0 |
| 2      | 7.79                    | 8.38 | 8.1 | 8.4      | 546  | 0  | 0  | 0  | 0  | 0 |
| 3      | 7.27                    | 8.51 | 7.8 | 7.7      | 544  | 4  | 5  | 4  | 5  | 5 |
| 4      | 7.41                    | 8.53 | 9.2 | 9.1      | 5460 | 0  | 0  | 7  | 0  | 0 |
| 5      | 7.55                    | 8.41 | 9.2 | 9.4      | 843  | 3  | 4  | 0  | 3  | - |
| 6      | 7.62                    | 8.53 | 9.0 | 8.1      | 545  | 8  | 8  | 10 | 10 | - |
| 7      |                         |      |     |          |      |    |    |    |    | - |
| 8      |                         |      |     |          |      |    |    |    |    | - |
| Total= | 15                      | 17   | 18  | 22       | 30   | 19 | 17 | 27 |    |   |

Mean Neonates/Female = 18.5

## Appendix C

### Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Splitter Box Effluent to Fathead Minnows

APPENDIX C

## CETIS Summary Report

Report Date: 22 Oct-09 11:40 (p 1 of 2)  
 Test Code: 21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test |                     |                                   |                      |         |         |          | Pacific EcoRisk                    |         |         |       |       |
|--|---------------------|-----------------------------------|----------------------|---------|---------|----------|------------------------------------|---------|---------|-------|-------|
| Batch ID:                                    | 00-4261-3501        | Test Type: Growth-Survival (7d)   |                      |         |         | Analyst: | Jason Walker                       |         |         |       |       |
| Start Date:                                  | 22 Sep-09 15:45     | Protocol: EPA-821-R-02-013 (2002) |                      |         |         | Diluent: | Laboratory Water                   |         |         |       |       |
| Ending Date:                                 | 29 Sep-09 12:20     | Species: Pirnephales promelas     |                      |         |         | Brine:   | Not Applicable                     |         |         |       |       |
| Duration:                                    | 6d 21h              | Source: Aquatic Biosystems, CO    |                      |         |         | Age:     | 1                                  |         |         |       |       |
| Sample ID:                                   | 18-5359-5522        | Code:                             | Eff                  |         |         |          | Client: Precision Analytical       |         |         |       |       |
| Sample Date:                                 | 21 Sep-09 08:15     | Material:                         | Effluent             |         |         |          | Project: 15239                     |         |         |       |       |
| Receive Date:                                | 21 Sep-09 18:00     | Source:                           | Precision Analytical |         |         |          |                                    |         |         |       |       |
| Sample Age:                                  | 32h (2.9 °C)        | Station:                          | Splitter Box         |         |         |          |                                    |         |         |       |       |
| <b>Comparison Summary</b>                    |                     |                                   |                      |         |         |          |                                    |         |         |       |       |
| Analysis ID                                  | Endpoint            | NOEL                              | LOEL                 | TOEL    | PMSD    | TU       | Method                             |         |         |       |       |
| 02-9670-0835                                 | 7d Survival Rate    | 50                                | 75                   | 61.2    | 16.6%   | 2        | Dunnett's Multiple Comparison Test |         |         |       |       |
| 02-5918-6229                                 | Mean Dry Biomass-mg | 50                                | 75                   | 61.2    | 14.7%   | 2        | Dunnett's Multiple Comparison Test |         |         |       |       |
| 18-7298-6913                                 | Mean Dry Weight-mg  | 75                                | 100                  | 86.6    | 17.3%   | 1.33     | Dunnett's Multiple Comparison Test |         |         |       |       |
| <b>Point Estimate Summary</b>                |                     |                                   |                      |         |         |          |                                    |         |         |       |       |
| Analysis ID                                  | Endpoint            | Level                             | %                    | 95% LCL | 95% UCL | TU       | Method                             |         |         |       |       |
| 00-9876-2255                                 | 7d Survival Rate    | EC5                               | 25.4                 | 5.45    | 38.7    | 3.94     | Linear Regression (MLE)            |         |         |       |       |
|  |                     | EC10                              | 33.1                 | 10.6    | 46.9    | 3.02     |                                    |         |         |       |       |
|  |                     | EC15                              | 39.6                 | 16.3    | 54      | 2.53     |                                    |         |         |       |       |
|  |                     | EC20                              | 45.6                 | 22.8    | 61.3    | 2.19     |                                    |         |         |       |       |
|  |                     | EC25                              | 51.6                 | 29.7    | 69.6    | 1.94     |                                    |         |         |       |       |
|  |                     | EC40                              | 70.1                 | 50.7    | 110     | 1.43     |                                    |         |         |       |       |
|  |                     | EC50                              | 84.4                 | 62.9    | 160     | 1.19     |                                    |         |         |       |       |
| 08-5932-0812                                 | Mean Dry Biomass-mg | IC5                               | 7.21                 | N/A     | 55.2    | 13.9     | Linear Interpolation (ICPIN)       |         |         |       |       |
|  |                     | IC10                              | 31.2                 | N/A     | 63.2    | 3.2      |                                    |         |         |       |       |
|  |                     | IC15                              | 50.6                 | N/A     | 55.5    | 1.98     |                                    |         |         |       |       |
|  |                     | IC20                              | 53.5                 | 43.1    | 59      | 1.87     |                                    |         |         |       |       |
|  |                     | IC25                              | 56.6                 | 50.8    | 61.8    | 1.77     |                                    |         |         |       |       |
|  |                     | IC40                              | 66.9                 | 61      | 72.1    | 1.5      |                                    |         |         |       |       |
|  |                     | IC50                              | 74.7                 | 68.7    | 79.3    | 1.34     |                                    |         |         |       |       |
| <b>7d Survival Rate Summary</b>              |                     |                                   |                      |         |         |          |                                    |         |         |       |       |
| Conc-%                                       | Control Type        | Count                             | Mean                 | 95% LCL | 95% UCL | Min      | Max                                | Std Err | Std Dev | CV%   | Diff% |
| 0  | Lab Water Contr     | 4                                 | 1                    | 1       | 1       | 1        | 1                                  | 0       | 0       | 0.0%  | 0.0%  |
| 12.5   |                     | 4                                 | 0.975                | 0.956   | 0.994   | 0.9      | 1                                  | 0.00913 | 0.05    | 5.13% | 2.5%  |
| 25   |                     | 4                                 | 0.925                | 0.869   | 0.981   | 0.7      | 1                                  | 0.0274  | 0.15    | 16.2% | 7.5%  |
| 50   |                     | 4                                 | 0.925                | 0.906   | 0.944   | 0.9      | 1                                  | 0.00913 | 0.05    | 5.41% | 7.5%  |
| 75   |                     | 4                                 | 0.6                  | 0.547   | 0.653   | 0.5      | 0.8                                | 0.0258  | 0.141   | 23.6% | 40.0% |
| 100  |                     | 4                                 | 0.275                | 0.192   | 0.358   | 0.1      | 0.6                                | 0.0405  | 0.222   | 80.6% | 72.5% |
| <b>Mean Dry Biomass-mg Summary</b>           |                     |                                   |                      |         |         |          |                                    |         |         |       |       |
| Conc-%                                       | Control Type        | Count                             | Mean                 | 95% LCL | 95% UCL | Min      | Max                                | Std Err | Std Dev | CV%   | Diff% |
| 0  | Lab Water Contr     | 4                                 | 0.388                | 0.378   | 0.399   | 0.359    | 0.416                              | 0.00511 | 0.028   | 7.21% | 0.0%  |
| 12.5   |                     | 4                                 | 0.364                | 0.35    | 0.379   | 0.311    | 0.402                              | 0.00698 | 0.0382  | 10.5% | 6.18% |
| 25   |                     | 4                                 | 0.356                | 0.34    | 0.373   | 0.294    | 0.402                              | 0.0083  | 0.0454  | 12.7% | 8.18% |
| 50   |                     | 4                                 | 0.334                | 0.328   | 0.341   | 0.31     | 0.348                              | 0.00329 | 0.018   | 5.4%  | 13.9% |
| 75   |                     | 4                                 | 0.193                | 0.185   | 0.2     | 0.174    | 0.221                              | 0.00369 | 0.0202  | 10.5% | 50.4% |
| 100  |                     | 4                                 | 0.0647               | 0.0493  | 0.0802  | 0.034    | 0.124                              | 0.00755 | 0.0413  | 63.8% | 83.3% |

**CETIS Summary Report**

Report Date:

22 Oct-09 11:40 (p 2 of 2)

Test Code:

21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test |                 |       |       |         |         |       |       |         |         | Pacific EcoRisk |       |  |
|--|-----------------|-------|-------|---------|---------|-------|-------|---------|---------|-----------------|-------|--|
| Mean Dry Weight-mg Summary                   |                 |       |       |         |         |       |       |         |         |                 |       |  |
| Conc-%                                       | Control Type    | Count | Mean  | 95% LCL | 95% UCL | Min   | Max   | Std Err | Std Dev | CV%             | Diff% |  |
| 0  | Lab Water Contr | 4     | 0.388 | 0.378   | 0.399   | 0.359 | 0.416 | 0.00511 | 0.028   | 7.21%           | 0.0%  |  |
| 12.5   |                 | 4     | 0.373 | 0.364   | 0.382   | 0.346 | 0.402 | 0.00422 | 0.0231  | 6.2%            | 3.96% |  |
| 25   |                 | 4     | 0.388 | 0.378   | 0.398   | 0.359 | 0.42  | 0.00511 | 0.028   | 7.21%           | 0.06% |  |
| 50   |                 | 4     | 0.362 | 0.354   | 0.369   | 0.344 | 0.387 | 0.00357 | 0.0195  | 5.4%            | 6.83% |  |
| 75   |                 | 4     | 0.328 | 0.313   | 0.343   | 0.276 | 0.368 | 0.00726 | 0.0398  | 12.1%           | 15.5% |  |
| 100  |                 | 4     | 0.263 | 0.236   | 0.29    | 0.195 | 0.34  | 0.0133  | 0.0729  | 27.7%           | 32.3% |  |
| 7d Survival Rate Detail                      |                 |       |       |         |         |       |       |         |         |                 |       |  |
| Conc-%                                       | Control Type    | Rep 1 | Rep 2 | Rep 3   | Rep 4   |       |       |         |         |                 |       |  |
| 0  | Lab Water Contr | 1     | 1     | 1       | 1       |       |       |         |         |                 |       |  |
| 12.5   |                 | 1     | 1     | 0.9     | 1       |       |       |         |         |                 |       |  |
| 25   |                 | 1     | 1     | 1       | 0.7     |       |       |         |         |                 |       |  |
| 50   |                 | 0.9   | 1     | 0.9     | 0.9     |       |       |         |         |                 |       |  |
| 75   |                 | 0.8   | 0.5   | 0.6     | 0.5     |       |       |         |         |                 |       |  |
| 100  |                 | 0.2   | 0.2   | 0.6     | 0.1     |       |       |         |         |                 |       |  |
| Mean Dry Biomass-mg Detail                   |                 |       |       |         |         |       |       |         |         |                 |       |  |
| Conc-%                                       | Control Type    | Rep 1 | Rep 2 | Rep 3   | Rep 4   |       |       |         |         |                 |       |  |
| 0  | Lab Water Contr | 0.408 | 0.37  | 0.416   | 0.359   |       |       |         |         |                 |       |  |
| 12.5   |                 | 0.37  | 0.402 | 0.311   | 0.374   |       |       |         |         |                 |       |  |
| 25   |                 | 0.402 | 0.371 | 0.359   | 0.294   |       |       |         |         |                 |       |  |
| 50   |                 | 0.31  | 0.348 | 0.348   | 0.331   |       |       |         |         |                 |       |  |
| 75   |                 | 0.221 | 0.184 | 0.192   | 0.174   |       |       |         |         |                 |       |  |
| 100  |                 | 0.039 | 0.062 | 0.124   | 0.034   |       |       |         |         |                 |       |  |
| Mean Dry Weight-mg Detail                    |                 |       |       |         |         |       |       |         |         |                 |       |  |
| Conc-%                                       | Control Type    | Rep 1 | Rep 2 | Rep 3   | Rep 4   |       |       |         |         |                 |       |  |
| 0  | Lab Water Contr | 0.408 | 0.37  | 0.416   | 0.359   |       |       |         |         |                 |       |  |
| 12.5   |                 | 0.37  | 0.402 | 0.346   | 0.374   |       |       |         |         |                 |       |  |
| 25   |                 | 0.402 | 0.371 | 0.359   | 0.42    |       |       |         |         |                 |       |  |
| 50   |                 | 0.344 | 0.348 | 0.387   | 0.368   |       |       |         |         |                 |       |  |
| 75   |                 | 0.276 | 0.368 | 0.32    | 0.348   |       |       |         |         |                 |       |  |
| 100  |                 | 0.195 | 0.31  | 0.207   | 0.34    |       |       |         |         |                 |       |  |

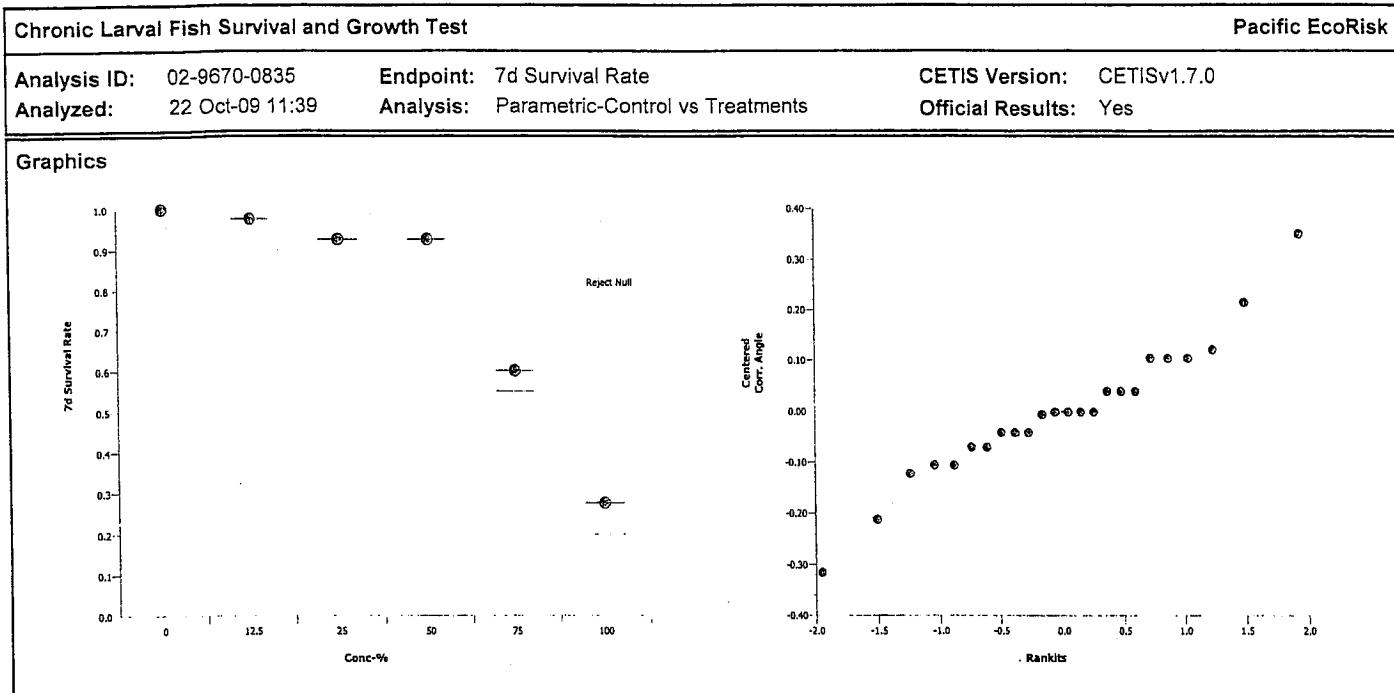
## CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 3 of 4)  
 Test Code: 21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test   |                                 |  |             |             |         |                        |                    | Pacific EcoRisk |         |       |       |
|--|---------------------------------|--|-------------|-------------|---------|------------------------|--------------------|-----------------|---------|-------|-------|
| Analysis ID:                                   | 02-9670-0835                    | Endpoint: 7d Survival Rate                 |             |             |         | CETIS Version:         | CETISv1.7.0        |                 |         |       |       |
| Analyzed:                                      | 22 Oct-09 11:39                 | Analysis: Parametric-Control vs Treatments |             |             |         | Official Results:      | Yes                |                 |         |       |       |
| <b>Data Transform</b>                          |                                 |  |             |             |         |                        |                    |                 |         |       |       |
| Angular (Corrected)                            |                                 | Zeta                                       | Alt Hyp     | Monte Carlo | NOEL    | LOEL                   | TOEL               | TU              | PMSD    |       |       |
| 0  |                                 | C > T                                      | Not Run     |             | 50      | 75                     | 61.2               | 2               | 16.6%   |       |       |
| <b>Dunnett's Multiple Comparison Test</b>      |                                 |  |             |             |         |                        |                    |                 |         |       |       |
| Control  | vs                              | Conc-%                                     | Test Stat   | Critical    | MSD     | P-Value                | Decision(5%)       |                 |         |       |       |
| Lab Water Control                              | 12.5                            | 0.377                                      | 2.41        | 0.26        | 0.6995  | Non-Significant Effect |                    |                 |         |       |       |
|  | 25                              | 0.973                                      | 2.41        | 0.26        | 0.4337  | Non-Significant Effect |                    |                 |         |       |       |
|  | 50                              | 1.13                                       | 2.41        | 0.26        | 0.3656  | Non-Significant Effect |                    |                 |         |       |       |
|  | 75*                             | 4.82                                       | 2.41        | 0.26        | 0.0003  | Significant Effect     |                    |                 |         |       |       |
|  | 100*                            | 8.12                                       | 2.41        | 0.26        | <0.0001 | Significant Effect     |                    |                 |         |       |       |
| <b>ANOVA Table</b>                             |                                 |  |             |             |         |                        |                    |                 |         |       |       |
| Source   | Sum Squares                     |  | Mean Square | DF          | F Stat  | P-Value                | Decision(5%)       |                 |         |       |       |
| Between  | 2.428125                        |  | 0.4856251   | 5           | 20.8    | <0.0001                | Significant Effect |                 |         |       |       |
| Error  | 0.4206359                       |  | 0.02336866  | 18          |         |                        |                    |                 |         |       |       |
| Total  | 2.848761                        |  | 0.5089937   | 23          |         |                        |                    |                 |         |       |       |
| <b>ANOVA Assumptions</b>                       |                                 |  |             |             |         |                        |                    |                 |         |       |       |
| Attribute                                      | Test                            |  | Test Stat   | Critical    | P-Value | Decision(1%)           |                    |                 |         |       |       |
| Variances                                      | Mod Levene Equality of Variance |  | 0.62        | 4.25        | 0.6861  | Equal Variances        |                    |                 |         |       |       |
| Distribution                                   | Shapiro-Wilk Normality          |  | 0.96        |             | 0.4436  | Normal Distribution    |                    |                 |         |       |       |
| <b>7d Survival Rate Summary</b>                |                                 |  |             |             |         |                        |                    |                 |         |       |       |
| Conc-%   | Control Type                    | Count                                      | Mean        | 95% LCL     | 95% UCL | Min                    | Max                | Std Err         | Std Dev | CV%   | Diff% |
| 0  | Lab Water Contr                 | 4  | 1           | 1           | 1       | 1                      | 1                  | 0               | 0       | 0.0%  | 0.0%  |
| 12.5   |                                 | 4  | 0.975       | 0.956       | 0.994   | 0.9                    | 1                  | 0.00928         | 0.05    | 5.13% | 2.5%  |
| 25   |                                 | 4  | 0.925       | 0.868       | 0.982   | 0.7                    | 1                  | 0.0279          | 0.15    | 16.2% | 7.5%  |
| 50   |                                 | 4  | 0.925       | 0.906       | 0.944   | 0.9                    | 1                  | 0.00928         | 0.05    | 5.41% | 7.5%  |
| 75   |                                 | 4  | 0.6         | 0.546       | 0.654   | 0.5                    | 0.8                | 0.0263          | 0.141   | 23.6% | 40.0% |
| 100  |                                 | 4  | 0.275       | 0.191       | 0.359   | 0.1                    | 0.6                | 0.0412          | 0.222   | 80.6% | 72.5% |
| <b>Angular (Corrected) Transformed Summary</b> |                                 |  |             |             |         |                        |                    |                 |         |       |       |
| Conc-%   | Control Type                    | Count                                      | Mean        | 95% LCL     | 95% UCL | Min                    | Max                | Std Err         | Std Dev | CV%   | Diff% |
| 0  | Lab Water Cont                  | 4  | 1.41        | 1.41        | 1.41    | 1.41                   | 1.41               | 0               | 0       | 0.0%  | 0.0%  |
| 12.5   |                                 | 4  | 1.37        | 1.34        | 1.4     | 1.25                   | 1.41               | 0.0151          | 0.0815  | 5.94% | 2.89% |
| 25   |                                 | 4  | 1.31        | 1.23        | 1.39    | 0.991                  | 1.41               | 0.0391          | 0.21    | 16.1% | 7.45% |
| 50   |                                 | 4  | 1.29        | 1.26        | 1.32    | 1.25                   | 1.41               | 0.0151          | 0.0815  | 6.32% | 8.66% |
| 75   |                                 | 4  | 0.891       | 0.833       | 0.949   | 0.785                  | 1.11               | 0.0282          | 0.152   | 17.0% | 36.9% |
| 100  |                                 | 4  | 0.534       | 0.441       | 0.627   | 0.322                  | 0.886              | 0.0453          | 0.244   | 45.7% | 62.2% |

# CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 4 of 4)  
Test Code: 21-2638-0347/36402



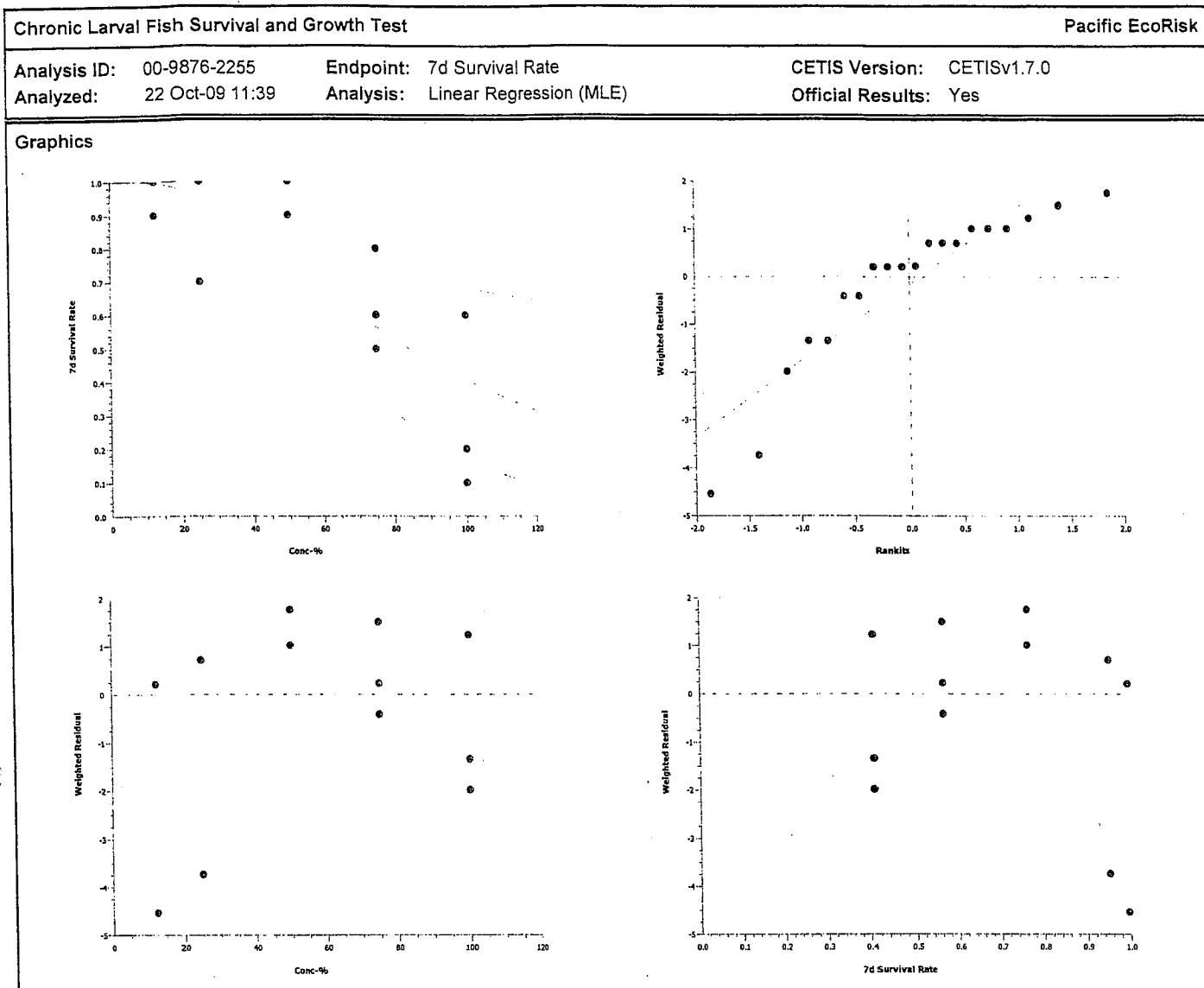
## CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 1 of 2)  
 Test Code: 21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test                                      |                                 |                   |           |                         |                  |                            |                           | Pacific EcoRisk |                           |    |    |  |  |  |  |  |  |  |
|---|---------------------------------|-------------------|-----------|-------------------------|------------------|----------------------------|---------------------------|-----------------|---------------------------|----|----|--|--|--|--|--|--|--|
| Analysis ID: 00-9876-2255   | Endpoint: 7d Survival Rate      |                   |           |                         |                  | CETIS Version: CETISv1.7.0 |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Analyzed: 22 Oct-09 11:39 Analysis: Linear Regression (MLE) Official Results: Yes |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| <b>Linear Regression Options</b>  |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Model Function  |                                 | Threshold Option  |           | Threshold               | Optimized Pooled | Het Corr                   | Weighted                  |                 |                           |    |    |  |  |  |  |  |  |  |
| Log-Normal [NED=A+B*log(X)]   |                                 | Control Threshold |           | 0                       | Yes              | No                         | Yes                       | Yes             |                           |    |    |  |  |  |  |  |  |  |
| <b>Regression Summary</b>   |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Iters   | LL                              | QAICc             | Mu        | Sigma                   | G Stat           | Chi-Sq                     | Critical                  | P-Value         | Decision(5%)              |    |    |  |  |  |  |  |  |  |
| 5   | -82.9                           | 59.9              | -0.341    | 0.317                   | 0.379            | 54.1                       | 28.9                      | 0.0000          | Significant Heterogeneity |    |    |  |  |  |  |  |  |  |
| <b>Point Estimates</b>  |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Level   | %                               | 95% LCL           | 95% UCL   | TU                      | 95% LCL          | 95% UCL                    |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC5   | 25.4                            | 5.45              | 38.7      | 3.94                    | 2.58             | 18.3                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC10  | 33.1                            | 10.6              | 46.9      | 3.02                    | 2.13             | 9.45                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC15  | 39.6                            | 16.3              | 54        | 2.53                    | 1.85             | 6.12                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC20  | 45.6                            | 22.8              | 61.3      | 2.19                    | 1.63             | 4.39                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC25  | 51.6                            | 29.7              | 69.6      | 1.94                    | 1.44             | 3.37                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC40  | 70.1                            | 50.7              | 110       | 1.43                    | 0.911            | 1.97                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| EC50  | 84.4                            | 62.9              | 160       | 1.19                    | 0.623            | 1.59                       |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| <b>Regression Parameters</b>  |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Parameter   | Estimate                        | Std Error         | 95% LCL   | 95% UCL                 | t Stat           | P-Value                    | Decision(5%)              |                 |                           |    |    |  |  |  |  |  |  |  |
| Slope   | 3.15                            | 0.924             | 1.21      | 5.09                    | 3.41             | 0.0031                     | Significant Parameter     |                 |                           |    |    |  |  |  |  |  |  |  |
| Intercept   | -1.08                           | 1.68              | -4.6      | 2.45                    | -0.642           | 0.5292                     | Non-Significant Parameter |                 |                           |    |    |  |  |  |  |  |  |  |
| <b>Residual Analysis</b>  |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Attribute   | Method                          |                   | Test Stat | Critical                | P-Value          | Decision(5%)               |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Variances   | Mod Levene Equality of Variance |                   | 0.257     | 3.06                    | 0.9006           | Equal Variances            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Distribution  | Shapiro-Wilk Normality          |                   | 0.848     |                         | 0.0049           | Non-normal Distribution    |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| <b>7d Survival Rate Summary</b>   |                                 |                   |           | Calculated Variate(A/B) |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Conc-%  | Control Type                    | Count             | Mean      | Min                     | Max              | Std Err                    | Std Dev                   | CV%             | Diff%                     | A  | B  |  |  |  |  |  |  |  |
| 0   | Lab Water Contr                 | 4                 | 1         | 1                       | 1                | 0                          | 0                         | 0.0%            | 0.0%                      | 40 | 40 |  |  |  |  |  |  |  |
| 12.5  |                                 | 4                 | 0.975     | 0.9                     | 1                | 0.00913                    | 0.05                      | 5.13%           | 2.5%                      | 39 | 40 |  |  |  |  |  |  |  |
| 25  |                                 | 4                 | 0.925     | 0.7                     | 1                | 0.0274                     | 0.15                      | 16.2%           | 7.5%                      | 37 | 40 |  |  |  |  |  |  |  |
| 50  |                                 | 4                 | 0.925     | 0.9                     | 1                | 0.00913                    | 0.05                      | 5.41%           | 7.5%                      | 37 | 40 |  |  |  |  |  |  |  |
| 75  |                                 | 4                 | 0.6       | 0.5                     | 0.8              | 0.0258                     | 0.141                     | 23.6%           | 40.0%                     | 24 | 40 |  |  |  |  |  |  |  |
| 100   |                                 | 4                 | 0.275     | 0.1                     | 0.6              | 0.0405                     | 0.222                     | 80.6%           | 72.5%                     | 11 | 40 |  |  |  |  |  |  |  |
| <b>7d Survival Rate Detail</b>  |                                 |                   |           |                         |                  |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| Conc-%  | Control Type                    | Rep 1             | Rep 2     | Rep 3                   | Rep 4            |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| 0   | Lab Water Control               | 1                 | 1         | 1                       | 1                |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| 12.5  |                                 | 1                 | 1         | 0.9                     | 1                |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| 25  |                                 | 1                 | 1         | 1                       | 0.7              |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| 50  |                                 | 0.9               | 1         | 0.9                     | 0.9              |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| 75  |                                 | 0.8               | 0.5       | 0.6                     | 0.5              |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |
| 100   |                                 | 0.2               | 0.2       | 0.6                     | 0.1              |                            |                           |                 |                           |    |    |  |  |  |  |  |  |  |

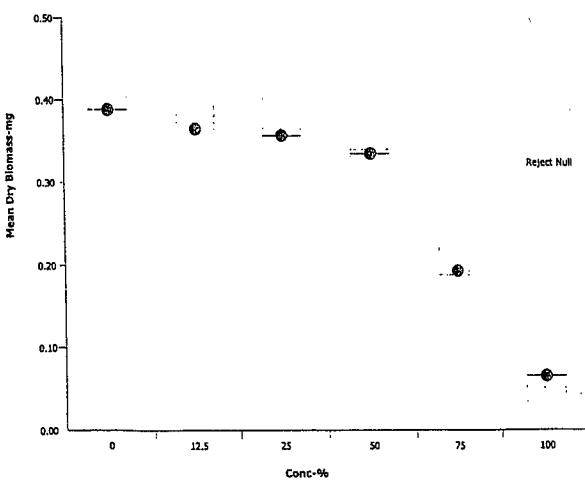
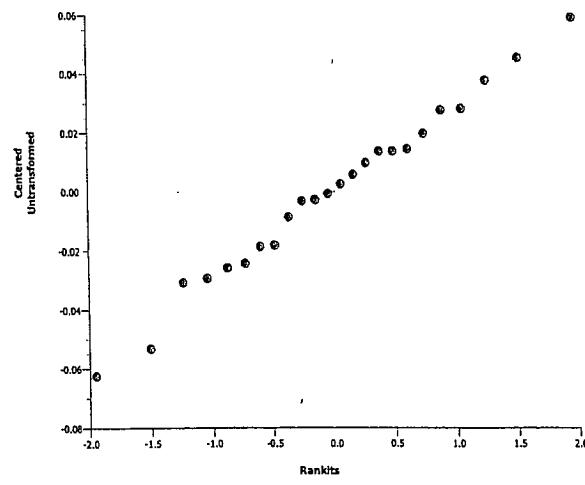
# CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 2 of 2)  
Test Code: 21-2638-0347/36402



## CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 2 of 4)  
 Test Code: 21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test   |                               |   |             |          |   |                     | Pacific EcoRisk        |                    |         |       |       |
|--|-------------------------------|---|-------------|----------|---|---------------------|------------------------|--------------------|---------|-------|-------|
| Analysis ID: 02-5918-6229<br>Analyzed: 22 Oct-09 11:39   |                               | Endpoint: Mean Dry Biomass-mg<br>Analysis: Parametric-Control vs Treatments |             |          | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                     |                        |                    |         |       |       |
| Data Transform   | Zeta                          | Alt Hyp   | Monte Carlo |          | NOEL  | LOEL                | TOEL                   | TU                 | PMSD    |       |       |
| Untransformed  | 0                             | C > T   | Not Run     |          | 50  | 75                  | 61.2                   | 2                  | 14.7%   |       |       |
| <b>Dunnett's Multiple Comparison Test</b>  |                               |   |             |          |   |                     |                        |                    |         |       |       |
| Control  | vs                            | Conc-%  | Test Stat   | Critical | MSD   | P-Value             | Decision(5%)           |                    |         |       |       |
| Lab Water Control  | 12.5                          | 12.5  | 1.01        | 2.41     | 0.0571  | 0.4167              | Non-Significant Effect |                    |         |       |       |
|  | 25                            | 25  | 1.34        | 2.41     | 0.0571  | 0.2837              | Non-Significant Effect |                    |         |       |       |
|  | 50                            | 50  | 2.28        | 2.41     | 0.0571  | 0.0638              | Non-Significant Effect |                    |         |       |       |
|  | 75*                           | 75*   | 8.24        | 2.41     | 0.0571  | <0.0001             | Significant Effect     |                    |         |       |       |
|  | 100*                          | 100*  | 13.6        | 2.41     | 0.0571  | <0.0001             | Significant Effect     |                    |         |       |       |
| <b>ANOVA Table</b>   |                               |   |             |          |   |                     |                        |                    |         |       |       |
| Source   | Sum Squares                   |   | Mean Square |          | DF  | F Stat              | P-Value                | Decision(5%)       |         |       |       |
| Between  | 0.3259389                     |   | 0.06518777  |          | 5   | 57.9                | <0.0001                | Significant Effect |         |       |       |
| Error  | 0.0202611                     |   | 0.001125617 |          | 18  |                     |                        |                    |         |       |       |
| Total  | 0.3462                        |   | 0.06631339  |          | 23  |                     |                        |                    |         |       |       |
| <b>ANOVA Assumptions</b>   |                               |   |             |          |   |                     |                        |                    |         |       |       |
| Attribute  | Test                          |   | Test Stat   | Critical | P-Value   | Decision(1%)        |                        |                    |         |       |       |
| Variances  | Bartlett Equality of Variance |   | 3.53        | 15.1     | 0.6186  | Equal Variances     |                        |                    |         |       |       |
| Distribution   | Shapiro-Wilk Normality        |   | 0.989       |          | 0.9935  | Normal Distribution |                        |                    |         |       |       |
| <b>Mean Dry Biomass-mg Summary</b>   |                               |   |             |          |   |                     |                        |                    |         |       |       |
| Conc-%   | Control Type                  | Count   | Mean        | 95% LCL  | 95% UCL   | Min                 | Max                    | Std Err            | Std Dev | CV%   | Diff% |
| 0  | Lab Water Contr               | 4   | 0.388       | 0.378    | 0.399   | 0.359               | 0.416                  | 0.0052             | 0.028   | 7.21% | 0.0%  |
| 12.5   |                               | 4   | 0.364       | 0.35     | 0.379   | 0.311               | 0.402                  | 0.0071             | 0.0382  | 10.5% | 6.18% |
| 25   |                               | 4   | 0.356       | 0.339    | 0.374   | 0.294               | 0.402                  | 0.00844            | 0.0454  | 12.7% | 8.18% |
| 50   |                               | 4   | 0.334       | 0.327    | 0.341   | 0.31                | 0.348                  | 0.00335            | 0.018   | 5.4%  | 13.9% |
| 75   |                               | 4   | 0.193       | 0.185    | 0.2   | 0.174               | 0.221                  | 0.00376            | 0.0202  | 10.5% | 50.4% |
| 100  |                               | 4   | 0.0647      | 0.049    | 0.0805  | 0.034               | 0.124                  | 0.00768            | 0.0413  | 63.8% | 83.3% |
| <b>Graphics</b>  |                               |   |             |          |   |                     |                        |                    |         |       |       |
|  <p>Scatter plot showing Mean Dry Biomass-mg on the Y-axis (ranging from 0.00 to 0.50) versus Conc-% on the X-axis (ranging from 0 to 100). The data points show a general decrease in biomass as concentration increases, with a significant drop at 100% concentration.</p> |                               |   |             |          |   |                     |                        |                    |         |       |       |
|  <p>Residual plot showing Centered Untransformed on the Y-axis (ranging from -0.06 to 0.06) versus Ranks on the X-axis (ranging from -2.0 to 2.0). The residuals show a clear positive linear trend, suggesting a violation of the assumption of homoscedasticity.</p>       |                               |   |             |          |   |                     |                        |                    |         |       |       |

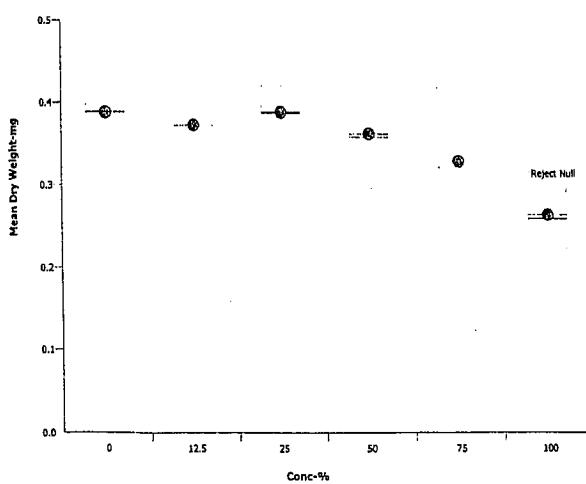
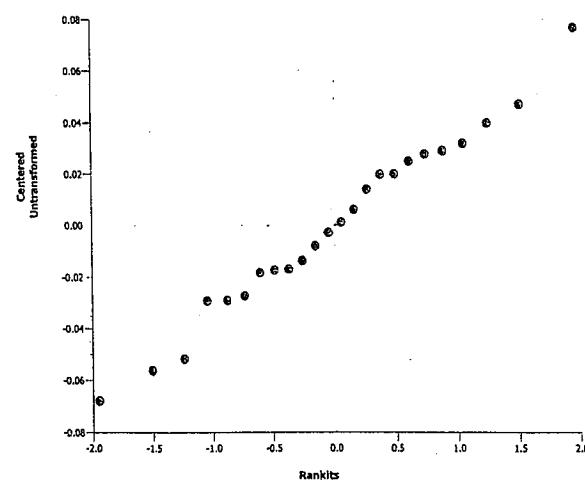
## CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 1 of 1)  
 Test Code: 21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test           |   |               |                  |                           |   | Pacific EcoRisk |         |       |       |  |  |  |  |
|--|---|---------------|------------------|---------------------------|---|-----------------|---------|-------|-------|--|--|--|--|
| Analysis ID: 08-5932-0812<br>Analyzed: 22 Oct-09 11:39 | Endpoint: Mean Dry Biomass-mg<br>Analysis: Linear Interpolation (ICPIN) |               |                  |                           | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                 |         |       |       |  |  |  |  |
| <b>Linear Interpolation Options</b>                    |   |               |                  |                           |   |                 |         |       |       |  |  |  |  |
| X Transform<br>Log(X+1)                                | Y Transform<br>Linear   | Seed<br>57951 | Resamples<br>200 | Exp 95% CL<br>Yes         | Method<br>Two-Point Interpolation                   |                 |         |       |       |  |  |  |  |
| <b>Point Estimates</b>                                 |   |               |                  |                           |   |                 |         |       |       |  |  |  |  |
| Level  | %   | 95% LCL       | 95% UCL          | TU                        | 95% LCL   | 95% UCL         |         |       |       |  |  |  |  |
| IC5  | 7.21  | N/A           | 55.2             | 13.9                      | 1.81  | N/A             |         |       |       |  |  |  |  |
| IC10   | 31.2  | N/A           | 63.2             | 3.2                       | 1.58  | N/A             |         |       |       |  |  |  |  |
| IC15   | 50.6  | N/A           | 55.5             | 1.98                      | 1.8   | N/A             |         |       |       |  |  |  |  |
| IC20   | 53.5  | 43.1          | 59               | 1.87                      | 1.7   | 2.32            |         |       |       |  |  |  |  |
| IC25   | 56.6  | 50.8          | 61.8             | 1.77                      | 1.62  | 1.97            |         |       |       |  |  |  |  |
| IC40   | 66.9  | 61            | 72.1             | 1.5                       | 1.39  | 1.64            |         |       |       |  |  |  |  |
| IC50   | 74.7  | 68.7          | 79.3             | 1.34                      | 1.26  | 1.46            |         |       |       |  |  |  |  |
| <b>Mean Dry Biomass-mg Summary</b>                     |   |               |                  | <b>Calculated Variate</b> |   |                 |         |       |       |  |  |  |  |
| Conc-%   | Control Type  | Count         | Mean             | Min                       | Max   | Std Err         | Std Dev | CV%   | Diff% |  |  |  |  |
| 0  | Lab Water Contr   | 4             | 0.388            | 0.359                     | 0.416   | 0.00511         | 0.028   | 7.21% | 0.0%  |  |  |  |  |
| 12.5   |   | 4             | 0.364            | 0.311                     | 0.402   | 0.00698         | 0.0382  | 10.5% | 6.18% |  |  |  |  |
| 25   |   | 4             | 0.356            | 0.294                     | 0.402   | 0.0083          | 0.0454  | 12.7% | 8.18% |  |  |  |  |
| 50   |   | 4             | 0.334            | 0.31                      | 0.348   | 0.00329         | 0.018   | 5.4%  | 13.9% |  |  |  |  |
| 75   |   | 4             | 0.193            | 0.174                     | 0.221   | 0.00369         | 0.0202  | 10.5% | 50.4% |  |  |  |  |
| 100  |   | 4             | 0.0647           | 0.034                     | 0.124   | 0.00755         | 0.0413  | 63.8% | 83.3% |  |  |  |  |
| <b>Mean Dry Biomass-mg Detail</b>                      |   |               |                  |                           |   |                 |         |       |       |  |  |  |  |
| Conc-%   | Control Type  | Rep 1         | Rep 2            | Rep 3                     | Rep 4   |                 |         |       |       |  |  |  |  |
| 0  | Lab Water Control   | 0.408         | 0.37             | 0.416                     | 0.359   |                 |         |       |       |  |  |  |  |
| 12.5   |   | 0.37          | 0.402            | 0.311                     | 0.374   |                 |         |       |       |  |  |  |  |
| 25   |   | 0.402         | 0.371            | 0.359                     | 0.294   |                 |         |       |       |  |  |  |  |
| 50   |   | 0.31          | 0.348            | 0.348                     | 0.331   |                 |         |       |       |  |  |  |  |
| 75   |   | 0.221         | 0.184            | 0.192                     | 0.174   |                 |         |       |       |  |  |  |  |
| 100  |   | 0.039         | 0.062            | 0.124                     | 0.034   |                 |         |       |       |  |  |  |  |
| <b>Graphics</b>  |   |               |                  |                           |   |                 |         |       |       |  |  |  |  |
|  |   |               |                  |                           |   |                 |         |       |       |  |  |  |  |

## CETIS Analytical Report

Report Date: 22 Oct-09 11:40 (p 1 of 4)  
 Test Code: 21-2638-0347/36402

| Chronic Larval Fish Survival and Growth Test  |  |         |             |          |  |                     |                        | Pacific EcoRisk    |         |       |       |
|---|--|---------|-------------|----------|--|---------------------|------------------------|--------------------|---------|-------|-------|
| Analysis ID: 18-7298-6913<br>Analyzed: 22 Oct-09 11:39                              | Endpoint: Mean Dry Weight-mg<br>Analysis: Parametric-Control vs Treatments |         |             |          | CETIS Version: CETISv1.7.0<br>Official Results: Yes                                  |                     |                        |                    |         |       |       |
| Data Transform  | Zeta   | Alt Hyp | Monte Carlo | NOEL     | LOEL   | TOEL                | TU                     | PMSD               |         |       |       |
| Untransformed   | 0  | C > T   | Not Run     | 75       | 100  | 86.6                | 1.33                   | 17.3%              |         |       |       |
| Dunnett's Multiple Comparison Test  |  |         |             |          |  |                     |                        |                    |         |       |       |
| Control   | vs   | Conc-%  | Test Stat   | Critical | MSD  | P-Value             | Decision(5%)           |                    |         |       |       |
| Lab Water Control   | 12.5   |         | 0.55        | 2.41     | 0.0673   | 0.6258              | Non-Significant Effect |                    |         |       |       |
|   | 25   |         | 0.00897     | 2.41     | 0.0673   | 0.8307              | Non-Significant Effect |                    |         |       |       |
|   | 50   |         | 0.949       | 2.41     | 0.0673   | 0.4445              | Non-Significant Effect |                    |         |       |       |
|   | 75   |         | 2.15        | 2.41     | 0.0673   | 0.0798              | Non-Significant Effect |                    |         |       |       |
|   | 100*   |         | 4.48        | 2.41     | 0.0673   | 0.0007              | Significant Effect     |                    |         |       |       |
| ANOVA Table   |  |         |             |          |  |                     |                        |                    |         |       |       |
| Source  | Sum Squares  |         | Mean Square |          | DF   | F Stat              | P-Value                | Decision(5%)       |         |       |       |
| Between   | 0.04653105   |         | 0.009306209 |          | 5  | 5.96                | 0.0020                 | Significant Effect |         |       |       |
| Error   | 0.02812496   |         | 0.001562498 |          | 18   |                     |                        |                    |         |       |       |
| Total   | 0.07465601   |         | 0.01086871  |          | 23   |                     |                        |                    |         |       |       |
| ANOVA Assumptions   |  |         |             |          |  |                     |                        |                    |         |       |       |
| Attribute   | Test   |         | Test Stat   | Critical | P-Value  | Decision(1%)        |                        |                    |         |       |       |
| Variances   | Bartlett Equality of Variance  |         | 6.98        | 15.1     | 0.2223   | Equal Variances     |                        |                    |         |       |       |
| Distribution  | Shapiro-Wilk Normality   |         | 0.985       |          | 0.9697   | Normal Distribution |                        |                    |         |       |       |
| Mean Dry Weight-mg Summary  |  |         |             |          |  |                     |                        |                    |         |       |       |
| Conc-%  | Control Type   | Count   | Mean        | 95% LCL  | 95% UCL  | Min                 | Max                    | Std Err            | Std Dev | CV%   | Diff% |
| 0   | Lab Water Contr  | 4       | 0.388       | 0.378    | 0.399  | 0.359               | 0.416                  | 0.0052             | 0.028   | 7.21% | 0.0%  |
| 12.5  |  | 4       | 0.373       | 0.364    | 0.382  | 0.346               | 0.402                  | 0.00429            | 0.0231  | 6.2%  | 3.96% |
| 25  |  | 4       | 0.388       | 0.377    | 0.399  | 0.359               | 0.42                   | 0.0052             | 0.028   | 7.21% | 0.06% |
| 50  |  | 4       | 0.362       | 0.354    | 0.369  | 0.344               | 0.387                  | 0.00363            | 0.0195  | 5.4%  | 6.83% |
| 75  |  | 4       | 0.328       | 0.313    | 0.343  | 0.276               | 0.368                  | 0.00738            | 0.0398  | 12.1% | 15.5% |
| 100   |  | 4       | 0.263       | 0.235    | 0.291  | 0.195               | 0.34                   | 0.0135             | 0.0729  | 27.7% | 32.3% |
| Graphics  |  |         |             |          |  |                     |                        |                    |         |       |       |
|  |  |         |             |          |  |                     |                        |                    |         |       |       |

## 7 Day Chronic Fathead Minnow Toxicity Test Data

Client: Precision Analytical - Chevron Cawelo  
 Test Material: Splitter Box  
 Test ID#: 36402 Project #: 15239  
 Test Date: 9/22/09 Randomization: 44.5

Organism Log#: 4783 Age: 448 hr  
 Organism Supplier: ABS  
 Control/Diluent: EPAMH  
 Control Water Batch: 1244

| Treatment<br>(% Effluent) | Temp<br>(°C) | pH   |      | D.O. (mg/L) |      | Conductivity<br>(µs/cm) | # Live Organisms |    |    |    | SIGN-OFF                |
|---------------------------|--------------|------|------|-------------|------|-------------------------|------------------|----|----|----|-------------------------|
|                           |              | new  | old  | new         | old  |                         | A                | B  | C  | D  |                         |
| Lab Water Control         | 25.7         | 8.39 |      | 8.8         |      | 315                     | 10               | 10 | 10 | 10 | Date: 9/22/09           |
| 12.5%                     | 25.7         | 8.27 |      | 8.9         |      | 344                     | 10               | 10 | 10 | 10 | Sample ID: 22773        |
| 25%                       | 25.7         | 8.19 |      | 8.8         |      | 373                     | 10               | 10 | 10 | 10 | Test Solution Prep: 8m  |
| 50%                       | 25.7         | 7.95 |      | 8.4         |      | 431                     | 10               | 10 | 10 | 10 | New WQ: 8m              |
| 75%                       | 25.7         | 7.87 |      | 8.6         |      | 485                     | 10               | 10 | 10 | 10 | Initiation Time: 1545   |
| 100%                      | 25.7         | 7.82 |      | 8.5         |      | 537                     | 10               | 10 | 10 | 10 | Initiation Signoff: KO  |
| Meter ID                  | 22A pH11     |      |      | D012        |      | E004                    |                  |    |    |    |                         |
| Lab Water Control         | 25.8         | 7.96 | 7.78 | 9.0         | 7.4  | 377                     | 10               | 10 | 10 | 10 | Date: 9.23.09           |
| 12.5%                     | 25.8         | 8.01 | 7.79 | 8.6         | 7.5  | 393                     | 10               | 10 | 10 | 10 | Sample ID: 22773        |
| 25%                       | 25.8         | 8.00 | 7.85 | 8.6         | 7.6  | 414                     | 10               | 10 | 10 | 10 | Test Solution Prep: EPL |
| 50%                       | 25.8         | 7.90 | 7.88 | 8.6         | 7.4  | 464                     | 10               | 10 | 10 | 10 | New WQ: 8m              |
| 75%                       | 25.8         | 7.85 | 8.01 | 8.7         | 7.6  | 505                     | 10               | 10 | 10 | 10 | Renewal Time: 10:30     |
| 100%                      | 25.8         | 7.77 | 8.18 | 8.8         | 7.7  | 553                     | 10               | 10 | 10 | 10 | Renewal Signoff: 8m     |
| Meter ID                  | 22A pH11     | pH11 | D012 | D013        | E003 |                         |                  |    |    |    | Old WQ: KO              |
| Lab Water Control         | 25.6         | 8.32 | 7.69 | 8.9         | 8.6  | 363                     | 10               | 10 | 10 | 10 | Date: 9/24/09           |
| 12.5%                     | 25.6         | 8.25 | 7.83 | 8.7         | 8.6  | 387                     | 10               | 10 | 10 | 10 | Sample ID: 22773        |
| 25%                       | 25.6         | 8.20 | 7.92 | 8.7         | 8.8  | 408                     | 10               | 10 | 10 | 10 | Test Solution Prep: EPL |
| 50%                       | 25.6         | 8.11 | 8.07 | 9.0         | 8.6  | 455                     | 10               | 10 | 10 | 10 | New WQ: 8m              |
| 75%                       | 25.6         | 7.97 | 8.17 | 8.6         | 8.4  | 504                     | 10               | 10 | 10 | 10 | Renewal Time: 1430      |
| 100%                      | 25.6         | 7.80 | 8.24 | 8.2         | 8.4  | 551                     | 10               | 10 | 10 | 10 | Renewal Signoff: 8m     |
| Meter ID                  | 22A pH11     | pH11 | D012 | D017        | E004 |                         |                  |    |    |    | Old WQ: 8m              |
| Lab Water Control         | 25.8         | 8.39 | 7.98 | 7.8         | 6.1  | 370                     | 10               | 10 | 10 | 10 | Date: 9/25/09           |
| 12.5%                     | 25.8         | 8.15 | 8.03 | 7.7         | 6.9  | 391                     | 10               | 10 | 10 | 10 | Sample ID: 22773        |
| 25%                       | 25.8         | 8.00 | 8.06 | 7.6         | 6.3  | 416                     | 10               | 10 | 10 | 10 | Test Solution Prep: JPL |
| 50%                       | 25.8         | 7.86 | 8.18 | 7.7         | 6.3  | 457                     | 9                | 10 | 10 | 10 | New WQ: 8m              |
| 75%                       | 25.8         | 7.75 | 8.26 | 7.7         | 6.4  | 508                     | 10               | 10 | 10 | 10 | Renewal Time: 1445      |
| 100%                      | 25.8         | 7.68 | 8.25 | 7.6         | 6.2  | 551                     | 10               | 10 | 10 | 10 | Renewal Signoff: JPL    |
| Meter ID                  | 22A pH03     | pH03 | D013 | D014        | D014 | E003                    |                  |    |    |    | Old WQ: BH              |

## 7 Day Chronic Fathead Minnow Toxicity Test Data

Client: Precision Analytical - Chevron Cawelo  
 Test Material: Splitter Box  
 Test ID#: 36402 Project #: 15239  
 Test Date: 9-22-09 Randomization: 4-6-5

Organism Log#: 4783 Age: 24845  
 Organism Supplier: AOS Control/Diluent: EPAMH  
 Control Water Batch: 1244

| Treatment<br>(% Effluent) | Temp<br>(°C) | pH    |       | D.O. (mg/L) |      | Conductivity<br>(µS/cm) | # Live Organisms |    |    |  | SIGN-OFF   |
|---------------------------|--------------|-------|-------|-------------|------|-------------------------|------------------|----|----|--|--|
|                           |              | new   | old   | new         | old  |                         | A                | B  | C  | D  |  |
| Lab Water Control         | 26.0         | 8.11  | 7.90  | 8.8         | 6.5  | 320                     | 10               | 10 | 10 | 9  | Date: 9/26/09<br>Sample ID: 22773<br>Test Solution Prep: JPL<br>New WQ: EL<br>Renewal Time: 1430<br>Renewal Signoff: JPC<br>Old WQ: KQ |
| 12.5%                     | 26.0         | 8.04  | 7.87  | 9.0         | 6.2  | 391                     | 10               | 10 | 10 | 10   |  |
| 25%                       | 26.0         | 7.90  | 7.88  | 9.1         | 6.4  | 415                     | 10               | 10 | 10 | 10   |  |
| 50%                       | 26.0         | 7.80  | 7.97  | 9.2         | 6.6  | 459                     | 9                | 10 | 10 | 9  |  |
| 75%                       | 26.0         | 7.74  | 8.02  | 9.3         | 6.5  | 490                     | 9                | 10 | 9  | 10   |  |
| 100%                      | 26.0         | 7.60  | 8.03  | 8.9         | 6.4  | 547                     | 9                | 10 | 10 | 9  |  |
| Meter ID                  | 22A          | P103  | pH09  | D013        | D012 | EC03                    |                  |    |    |  |  |
| Lab Water Control         | 26.0         | 8.01  | 8.02  | 8.0         | 7.9  | 314                     | 10               | 10 | 10 | 9  | Date: 9/27/09<br>Sample ID: 22773<br>Test Solution Prep: JPL<br>New WQ: B1T<br>Renewal Time: 1135<br>Renewal Signoff: DA<br>Old WQ: BH |
| 12.5%                     | 26.0         | 7.94  | 7.90  | 8.6         | 8.2  | 333                     | 10               | 10 | 10 | 10   |  |
| 25%                       | 26.0         | 7.84  | 7.95  | 8.7         | 7.6  | 368                     | 10               | 10 | 10 | 8  |  |
| 50%                       | 26.0         | 7.74  | 7.97  | 8.8         | 7.7  | 261                     | 9                | 10 | 10 | 9  |  |
| 75%                       | 26.0         | 7.67  | 8.02  | 9.1         | 7.9  | 431                     | 8                | 9  | 7  | 8  |  |
| 100%                      | 26.0         | 7.59  | 8.04  | 9.4         | 7.2  | 525                     | 8                | 8  | 9  | 8  |  |
| Meter ID                  | 22A          | P1+09 | P1+09 | D013        | D013 | EC03                    |                  |    |    |  |  |
| Lab Water Control         | 26.0         | 7.97  | 7.91  | 8.2         | 8.0  | 309                     | 10               | 10 | 10 | 9  | Date: 9/28/09<br>Sample ID: 22773<br>Test Solution Prep: PA<br>New WQ: M<br>Renewal Time: 1430<br>Renewal Signoff: M<br>Old WQ: BH     |
| 12.5%                     | 26.0         | 7.93  | 7.82  | 8.5         | 7.6  | 332                     | 10               | 10 | 10 | 10   |  |
| 25%                       | 26.0         | 7.88  | 7.98  | 8.6         | 7.3  | 362                     | 10               | 10 | 10 | 7  |  |
| 50%                       | 26.0         | 7.79  | 8.9   | 9.0         | 7.7  | 427                     | 9                | 10 | 9  | 9  |  |
| 75%                       | 26.0         | 7.73  | 8.14  | 6.9         | 7.4  | 479                     | 8                | 7  | 6  | 8  |  |
| 100%                      | 26.0         | 7.69  | 8.21  | 9.5         | 7.6  | 538                     | 5                | 4  | 6  | 4  |  |
| Meter ID                  | 22A          | pH09  | p1+14 | D014        | D012 | EC04                    |                  |    |    |  |  |
| Lab Water Control         | 26.0         | 7.69  |       | 8.3         | 416  | 10                      | 10               | 10 | 10 | Date: 9/29/09<br>Termination Time: 1220<br>Termination Signoff: 8m<br>Old WQ: HW |  |
| 12.5%                     | 26.0         | 7.91  |       | 8.1         | 353  | 10                      | 10               | 9  | 10 |  |  |
| 25%                       | 26.0         | 7.97  |       | 8.0         | 374  | 10                      | 10               | 10 | 7  |  |  |
| 50%                       | 26.0         | 8.07  |       | 8.6         | 434  | 9                       | 10               | 9  | 9  |  |  |
| 75%                       | 26.0         | 8.16  |       | 7.9         | 503  | 8                       | 5                | 6  | 5  |  |  |
| 100%                      | 26.0         | 8.24  |       | 7.9         | 558  | 2                       | 2                | 6  | 1  |  |  |
| Meter ID                  | 22A          |       | pH14  |             | D012 | EC04                    |                  |    |    |  |  |

## Fathead Minnow Dry Weight Data Sheet

Client: Precision Analytical - Chevron Cawelo Test ID #: 36402 Project # 15239  
 Sample: Splitter Box Tare Weight Date: 9/29/09 Sign-off: YH  
 Test Date: 9/28/09 Final Weight Date: 10/7/09 Sign-off: DEP

| Pan ID     | Concentration Replicate | Initial Pan Weight (mg) | Final Pan Weight (mg) | Initial # of Organisms | Biomass Value (mg) |
|------------|-------------------------|-------------------------|-----------------------|------------------------|--------------------|
| 1          | Lab Water A             | 163.14                  | 167.22                | 10                     | 0.408 0.408 0.408  |
| 2          | B                       | 175.80                  | 179.50                | 10                     | 0.370              |
| 3          | C                       | 172.04                  | 176.20                | 10                     | 0.416              |
| 4          | D                       | 165.81                  | 169.40                | 10                     | 0.359              |
| 5          | 12.5 A                  | 172.33                  | 176.03                | 10                     | 0.370              |
| 6          | B                       | 173.91                  | 177.93                | 10                     | 0.407              |
| 7          | C                       | 176.42                  | 179.53                | 10                     | 0.346 311          |
| 8          | D                       | 152.04                  | 155.78                | 10                     | 0.374              |
| 9          | 25 A                    | 171.51                  | 175.53                | 10                     | 0.402              |
| 10         | B                       | 160.94                  | 164.65                | 10                     | 0.371              |
| 11         | C                       | 172.21                  | 175.80                | 10                     | 0.359              |
| 12         | D                       | 177.24                  | 180.18                | 10                     | 0.420 294          |
| 13         | 50 A                    | 183.08                  | 186.18                | 10                     | 0.347 310          |
| 14         | B                       | 163.32                  | 166.80                | 10                     | 0.348              |
| 15         | C                       | 181.52                  | 185.00                | 10                     | 0.307 348 JN       |
| 16         | D                       | 194.80                  | 198.11                | 10                     | 0.368 331 JN       |
| 17         | 75 A                    | 195.06                  | 197.27                | 10                     | 0.278 221 JN       |
| 18         | B                       | 167.70                  | 169.54                | 10                     | 0.368 184 JN       |
| 19         | C                       | 170.98                  | 172.90                | 10                     | 0.320 192 JN       |
| 20         | D                       | 170.66                  | 172.40                | 10                     | 0.348 174 JN       |
| 21         | 100 A                   | 177.81                  | 179.70                | 10                     | 0.145 039 JN       |
| 22         | B                       | 163.94                  | 164.56                | 10                     | 0.310 062 JN       |
| 23         | C                       | 170.47                  | 171.71                | 10                     | 0.124              |
| 24         | D                       | 168.36                  | 168.70                | 10                     | 0.034              |
| QA 1       |                         | 167.95                  | 168.11                |                        |                    |
| QA 2       |                         | 166.23                  | 166.36                |                        |                    |
| Balance ID |                         | 1                       | 1                     |                        |                    |

## Appendix D

### Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Pre-Poso Creek Effluent to *Ceriodaphnia dubia*

D/D

## CETIS Summary Report

Report Date: 22 Oct-09 12:44 (p 1 of 2)  
 Test Code: 20-2625-6513/36406

| Ceriodaphnia Survival and Reproduction Test |                 |                                       |                      |                              |         |          | Pacific EcoRisk                   |
|---|-----------------|---------------------------------------|----------------------|------------------------------|---------|----------|-----------------------------------|
| Batch ID:                                   | 12-2856-8008    | Test Type: Reproduction-Survival (7d) |                      |                              |         | Analyst: | Jason Walker                      |
| Start Date:                                 | 22 Sep-09 17:10 | Protocol: EPA-821-R-02-013 (2002)     |                      |                              |         | Diluent: | Laboratory Water                  |
| Ending Date:                                | 28 Sep-09 15:00 | Species: Ceriodaphnia dubia           |                      |                              |         | Brine:   | Not Applicable                    |
| Duration:                                   | 5d 22h          | Source: In-House Culture              |                      |                              |         | Age:     | 1                                 |
| Sample ID:                                  | 18-9649-9874    | Code:                                 | Eff                  | Client: Precision Analytical |         |          |                                   |
| Sample Date:                                | 21 Sep-09 07:30 | Material:                             | Effluent             | Project: 15239               |         |          |                                   |
| Receive Date:                               | 21 Sep-09 18:00 | Source:                               | Precision Analytical |                              |         |          |                                   |
| Sample Age:                                 | 34h (4.3 °C)    | Station:                              | Pre-Poso Creek       |                              |         |          |                                   |
| Comparison Summary                          |                 |                                       |                      |                              |         |          |                                   |
| Analysis ID                                 | Endpoint        | NOEL                                  | LOEL                 | TOEL                         | PMSD    | TU       | Method                            |
| 17-7912-2897                                | Reproduction    | 100                                   | >100                 | N/A                          | 14.3%   | 1        | Steel Many-One Rank Test          |
| 00-2558-3247                                | Survival        | 100                                   | >100                 | N/A                          | N/A     | 1        | Fisher Exact/Bonferroni-Holm Test |
| Point Estimate Summary                      |                 |                                       |                      |                              |         |          |                                   |
| Analysis ID                                 | Endpoint        | Level                                 | %                    | 95% LCL                      | 95% UCL | TU       | Method                            |
| 05-2037-9345                                | Reproduction    | IC5                                   | 81.5                 | 78.2                         | 88.6    | 1.23     | Linear Interpolation (ICPIN)      |
|   |                 | IC10                                  | 88.5                 | 82.3                         | N/A     | 1.13     |                                   |
|   |                 | IC15                                  | 96.1                 | 86.5                         | N/A     | 1.04     |                                   |
|   |                 | IC20                                  | >100                 | N/A                          | N/A     | <1       |                                   |
|   |                 | IC25                                  | >100                 | N/A                          | N/A     | <1       |                                   |
|   |                 | IC40                                  | >100                 | N/A                          | N/A     | <1       |                                   |
|   |                 | IC50                                  | >100                 | N/A                          | N/A     | <1       |                                   |
| Reproduction Summary                        |                 |                                       |                      |                              |         |          |                                   |
| Conc-%                                      | Control Type    | Count                                 | Mean                 | 95% LCL                      | 95% UCL | Min      | Max                               |
| 0   | Lab Water Contr | 10                                    | 23.2                 | 21.8                         | 24.6    | 14       | 27                                |
| 12.5  |                 | 10                                    | 25.9                 | 24.9                         | 26.9    | 21       | 30                                |
| 25  |                 | 10                                    | 29                   | 28                           | 30      | 26       | 36                                |
| 50  |                 | 10                                    | 26.2                 | 25.3                         | 27.1    | 22       | 29                                |
| 75  |                 | 10                                    | 27.7                 | 26.9                         | 28.5    | 24       | 31                                |
| 100   |                 | 10                                    | 21.8                 | 19.9                         | 23.7    | 9        | 26                                |
| Survival Summary                            |                 |                                       |                      |                              |         |          |                                   |
| Conc-%                                      | Control Type    | Count                                 | Mean                 | 95% LCL                      | 95% UCL | Min      | Max                               |
| 0   | Lab Water Contr | 10                                    | 1                    | 1                            | 1       | 1        | 1                                 |
| 12.5  |                 | 10                                    | 1                    | 1                            | 1       | 1        | 1                                 |
| 25  |                 | 10                                    | 1                    | 1                            | 1       | 1        | 1                                 |
| 50  |                 | 10                                    | 1                    | 1                            | 1       | 1        | 1                                 |
| 75  |                 | 10                                    | 1                    | 1                            | 1       | 1        | 1                                 |
| 100   |                 | 10                                    | 0.9                  | 0.782                        | 1       | 0        | 1                                 |

## CETIS Summary Report

Report Date:

22 Oct-09 12:44 (p 2 of 2)

Test Code:

20-2625-6513/36406

| Ceriodaphnia Survival and Reproduction Test |                 |       |       |       |       |       |       |       |       |       | Pacific EcoRisk |
|---|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| Reproduction Detail                         |                 |       |       |       |       |       |       |       |       |       |                 |
| Conc-%                                      | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10          |
| 0   | Lab Water Contr | 25    | 14    | 26    | 24    | 21    | 27    | 23    | 23    | 24    | 25              |
| 12.5  |                 | 26    | 28    | 21    | 24    | 27    | 27    | 25    | 28    | 23    | 30              |
| 25  |                 | 29    | 29    | 29    | 26    | 29    | 28    | 28    | 36    | 29    | 27              |
| 50  |                 | 27    | 28    | 25    | 22    | 26    | 26    | 23    | 29    | 27    | 29              |
| 75  |                 | 30    | 24    | 27    | 28    | 29    | 29    | 25    | 27    | 27    | 31              |
| 100   |                 | 20    | 20    | 22    | 26    | 24    | 9     | 23    | 26    | 23    | 25              |
| Survival Detail                             |                 |       |       |       |       |       |       |       |       |       |                 |
| Conc-%                                      | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10          |
| 0   | Lab Water Contr | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 12.5  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 25  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 50  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 75  |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1               |
| 100   |                 | 1     | 1     | 1     | 1     | 1     | 0     | 1     | 1     | 1     | 1               |

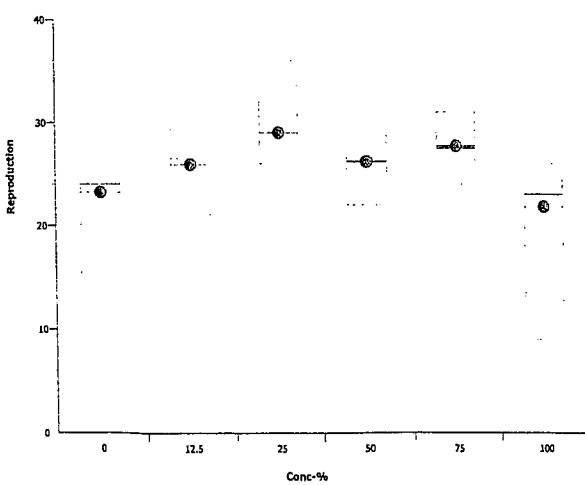
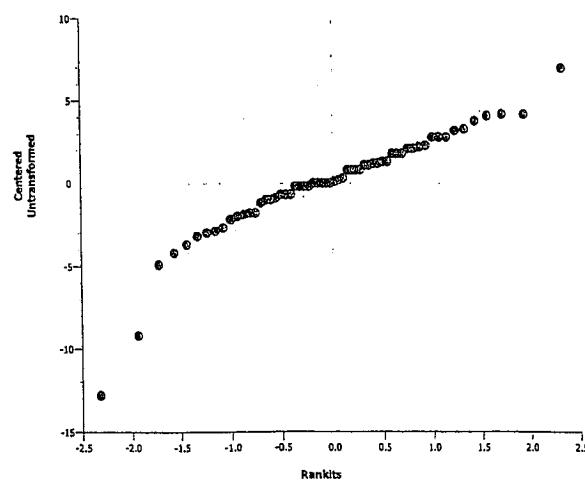
## CETIS Analytical Report

Report Date: 22 Oct-09 12:44 (p 1 of 1)  
 Test Code: 20-2625-6513/36406

| Ceriodaphnia Survival and Reproduction Test |                |         |                                      |         |                        |                            | Pacific EcoRisk |      |
|---|----------------|---------|--------------------------------------|---------|------------------------|----------------------------|-----------------|------|
| Analysis ID: 00-2558-3247                   |                |         | Endpoint: Survival                   |         |                        | CETIS Version: CETISv1.7.0 |                 |      |
| Analyzed: 22 Oct-09 12:44                   |                |         | Analysis: STP 2x2 Contingency Tables |         |                        | Official Results: Yes      |                 |      |
| Data Transform                              | Zeta           | Alt Hyp | Monte Carlo                          | NOEL    | LOEL                   | TOEL                       | TU              | PMSD |
| Untransformed                               |                | C > T   | Not Run                              | 100     | >100                   | N/A                        | 1               | N/A  |
| <b>Fisher Exact/Bonferroni-Holm Test</b>    |                |         |                                      |         |                        |                            |                 |      |
| Control                                     | vs             | Conc-%  | Test Stat                            | P-Value | Decision(0.05)         |                            |                 |      |
| Lab Water Control                           | 12.5           |         | 1                                    | 1.0000  | Non-Significant Effect |                            |                 |      |
|   | 25             |         | 1                                    | 1.0000  | Non-Significant Effect |                            |                 |      |
|   | 50             |         | 1                                    | 1.0000  | Non-Significant Effect |                            |                 |      |
|   | 75             |         | 1                                    | 1.0000  | Non-Significant Effect |                            |                 |      |
|   | 100            |         | 0.5                                  | 1.0000  | Non-Significant Effect |                            |                 |      |
| <b>Data Summary</b>                         |                |         |                                      |         |                        |                            |                 |      |
| Conc-%                                      | Control Type   | No-Resp | Resp                                 | Total   |                        |                            |                 |      |
| 0   | Lab Water Cont | 10      | 0                                    | 10      |                        |                            |                 |      |
| 12.5  |                | 10      | 0                                    | 10      |                        |                            |                 |      |
| 25  |                | 10      | 0                                    | 10      |                        |                            |                 |      |
| 50  |                | 10      | 0                                    | 10      |                        |                            |                 |      |
| 75  |                | 10      | 0                                    | 10      |                        |                            |                 |      |
| 100   |                | 9       | 1                                    | 10      |                        |                            |                 |      |
| <b>Graphics</b>                             |                |         |                                      |         |                        |                            |                 |      |
|   |                |         |                                      |         |                        |                            |                 |      |

## CETIS Analytical Report

Report Date: 22 Oct-09 12:44 (p 1 of 1)  
 Test Code: 20-2625-6513/36406

| Ceriodaphnia Survival and Reproduction Test   |   |         |  |          |         |   | Pacific EcoRisk        |         |         |       |        |
|---|---|---------|--|----------|---------|---|------------------------|---------|---------|-------|--------|
| Analysis ID: 17-7912-2897<br>Analyzed: 22 Oct-09 12:44                              | Endpoint: Reproduction<br>Analysis: Nonparametric-Control vs Treatments |         |  |          |         | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                        |         |         |       |        |
| Data Transform  | Zeta  | Alt Hyp | Monte Carlo  | NOEL     | LOEL    | TOEL  | TU                     | PMSD    |         |       |        |
| Untransformed   | 0   | C > T   | Not Run  | 100      | >100    | N/A   | 1                      | 14.3%   |         |       |        |
| Steel Many-One Rank Test  |   |         |  |          |         |   |                        |         |         |       |        |
| Control   | vs  | Conc-%  | Test Stat  | Critical | Ties    | P-Value   | Decision(5%)           |         |         |       |        |
| Lab Water Control   |   | 12.5    | 129  | 75       | 6       | 0.9992  | Non-Significant Effect |         |         |       |        |
|   |   | 25      | 153  | 75       | 2       | 1.0000  | Non-Significant Effect |         |         |       |        |
|   |   | 50      | 133  | 75       | 4       | 0.9998  | Non-Significant Effect |         |         |       |        |
|   |   | 75      | 146  | 75       | 3       | 1.0000  | Non-Significant Effect |         |         |       |        |
|   |   | 100     | 94   | 75       | 4       | 0.4923  | Non-Significant Effect |         |         |       |        |
| ANOVA Table   |   |         |  |          |         |   |                        |         |         |       |        |
| Source  | Sum Squares   |         | Mean Square  | DF       | F Stat  | P-Value   | Decision(5%)           |         |         |       |        |
| Between   | 366.1333  |         | 73.22667   | 5        | 7.01    | <0.0001   | Significant Effect     |         |         |       |        |
| Error   | 563.8   |         | 10.44074   | 54       |         |   |                        |         |         |       |        |
| Total   | 929.9333  |         | 83.66741   | 59       |         |   |                        |         |         |       |        |
| ANOVA Assumptions   |   |         |  |          |         |   |                        |         |         |       |        |
| Attribute   | Test  |         | Test Stat  | Critical | P-Value | Decision(1%)  |                        |         |         |       |        |
| Variances   | Bartlett Equality of Variance   |         | 9.39   | 15.1     | 0.0947  | Equal Variances                                     |                        |         |         |       |        |
| Distribution  | Shapiro-Wilk Normality  |         | 0.901  |          | 0.0001  | Non-normal Distribution                             |                        |         |         |       |        |
| Reproduction Summary  |   |         |  |          |         |   |                        |         |         |       |        |
| Conc-%  | Control Type  | Count   | Mean   | 95% LCL  | 95% UCL | Min   | Max                    | Std Err | Std Dev | CV%   | Diff%  |
| 0   | Lab Water Contr   | 10      | 23.2   | 21.8     | 24.6    | 14  | 27                     | 0.677   | 3.65    | 15.7% | 0.0%   |
| 12.5  |   | 10      | 25.9   | 24.9     | 26.9    | 21  | 30                     | 0.499   | 2.69    | 10.4% | -11.6% |
| 25  |   | 10      | 29   | 28       | 30      | 26  | 36                     | 0.495   | 2.67    | 9.2%  | -25.0% |
| 50  |   | 10      | 26.2   | 25.3     | 27.1    | 22  | 29                     | 0.436   | 2.35    | 8.96% | -12.9% |
| 75  |   | 10      | 27.7   | 26.9     | 28.5    | 24  | 31                     | 0.402   | 2.16    | 7.81% | -19.4% |
| 100   |   | 10      | 21.8   | 19.9     | 23.7    | 9   | 26                     | 0.926   | 4.98    | 22.9% | 6.03%  |
| Graphics  |   |         |  |          |         |   |                        |         |         |       |        |
|  |   |         |  |          |         |   |                        |         |         |       |        |

## CETIS Analytical Report

Report Date: 22 Oct-09 12:44 (p 1 of 1)  
 Test Code: 20-2625-6513/36406

| Ceriodaphnia Survival and Reproduction Test            |  |         |                           |            |   | Pacific EcoRisk |         |       |        |       |        |
|--|--|---------|---------------------------|------------|---|-----------------|---------|-------|--------|-------|--------|
| Analysis ID: 05-2037-9345<br>Analyzed: 22 Oct-09 12:44 | Endpoint: Reproduction<br>Analysis: Linear Interpolation (ICPIN) |         |                           |            | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                 |         |       |        |       |        |
| <b>Linear Interpolation Options</b>                    |  |         |                           |            |   |                 |         |       |        |       |        |
| X Transform  | Y Transform  | Seed    | Resamples                 | Exp 95% CL | Method  |                 |         |       |        |       |        |
| Log(X+1)   | Linear   | 57951   | 200                       | Yes        | Two-Point Interpolation                             |                 |         |       |        |       |        |
| <b>Point Estimates</b>                                 |  |         |                           |            |   |                 |         |       |        |       |        |
| Level  | %  | 95% LCL | 95% UCL                   | TU         | 95% LCL   | 95% UCL         |         |       |        |       |        |
| IC5  | 81.5   | 78.2    | 88.6                      | 1.23       | 1.13  | 1.28            |         |       |        |       |        |
| IC10   | 88.5   | 82.3    | N/A                       | 1.13       | N/A   | 1.21            |         |       |        |       |        |
| IC15   | 96.1   | 86.5    | N/A                       | 1.04       | N/A   | 1.16            |         |       |        |       |        |
| IC20   | >100   | N/A     | N/A                       | <1         | N/A   | N/A             |         |       |        |       |        |
| IC25   | >100   | N/A     | N/A                       | <1         | N/A   | N/A             |         |       |        |       |        |
| IC40   | >100   | N/A     | N/A                       | <1         | N/A   | N/A             |         |       |        |       |        |
| IC50   | >100   | N/A     | N/A                       | <1         | N/A   | N/A             |         |       |        |       |        |
| <b>Reproduction Summary</b>                            |  |         | <b>Calculated Variate</b> |            |   |                 |         |       |        |       |        |
| Conc-%   | Control Type   | Count   | Mean                      | Min        | Max   | Std Err         | Std Dev | CV%   | Diff%  |       |        |
| 0  | Lab Water Contr  | 10      | 23.2                      | 14         | 27  | 0.666           | 3.65    | 15.7% | 0.0%   |       |        |
| 12.5   |  | 10      | 25.9                      | 21         | 30  | 0.49            | 2.69    | 10.4% | -11.6% |       |        |
| 25   |  | 10      | 29                        | 26         | 36  | 0.487           | 2.67    | 9.2%  | -25.0% |       |        |
| 50   |  | 10      | 26.2                      | 22         | 29  | 0.429           | 2.35    | 8.96% | -12.9% |       |        |
| 75   |  | 10      | 27.7                      | 24         | 31  | 0.395           | 2.16    | 7.81% | -19.4% |       |        |
| 100  |  | 10      | 21.8                      | 9          | 26  | 0.91            | 4.98    | 22.9% | 6.03%  |       |        |
| <b>Reproduction Detail</b>                             |  |         |                           |            |   |                 |         |       |        |       |        |
| Conc-%   | Control Type   | Rep 1   | Rep 2                     | Rep 3      | Rep 4   | Rep 5           | Rep 6   | Rep 7 | Rep 8  | Rep 9 | Rep 10 |
| 0  | Lab Water Control  | 25      | 14                        | 26         | 24  | 21              | 27      | 23    | 23     | 24    | 25     |
| 12.5   |  | 26      | 28                        | 21         | 24  | 27              | 27      | 25    | 28     | 23    | 30     |
| 25   |  | 29      | 29                        | 29         | 26  | 29              | 28      | 28    | 36     | 29    | 27     |
| 50   |  | 27      | 28                        | 25         | 22  | 26              | 26      | 23    | 29     | 27    | 29     |
| 75   |  | 30      | 24                        | 27         | 28  | 29              | 29      | 25    | 27     | 27    | 31     |
| 100  |  | 20      | 20                        | 22         | 26  | 24              | 9       | 23    | 26     | 23    | 25     |
| <b>Graphics</b>  |  |         |                           |            |   |                 |         |       |        |       |        |
|  |  |         |                           |            |   |                 |         |       |        |       |        |

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: Precision Analytical - Chevron Cawelo Material: Pre-Poso Creek Test Date: 9/22/01

Project #: 15239 Test ID: 36406 Randomization: Board 2 Control Water: Lab Water (80:20)

| Survival / Reproduction                             |      |      |      |     |                                   |      |           |    |    |    |    | SIGN-OFF |     |    |    |    |    |    |    |    |
|---|------|------|------|-----|-----------------------------------|------|-----------|----|----|----|----|----------|-----|----|----|----|----|----|----|----|
| Day   | pH   |      | D.O. |     | Cond. ( $\mu\text{S}/\text{cm}$ ) |      | Temp (°C) |    | A  | B  | C  | D        | E   | F  | G  | H  | I  | J  |    |    |
|   | New  | Old  | New  | Old |                                   |      |           |    | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 0   | 8.10 |      | 8.16 |     | 236                               | 25.8 | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 1   | 8.23 | 8.14 | 9.4  | 9.0 | 239                               | 25.9 | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 2   | 7.81 | 8.09 | 8.4  | 8.6 | 235                               | 25.6 | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 3   | 8.20 | 8.31 | 7.9  | 7.1 | 230                               | 25.8 | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 4   | 8.13 | 8.24 | 8.8  | 8.1 | 234                               | 25.8 | 5         | 6  | 6  | 6  | 6  | 6        | 6   | 6  | 6  | 6  | 5  |    |    |    |
| 5   | 7.70 | 8.23 | 8.9  | 8.7 | 243                               | 25.9 | 8         | 10 | 8  | 8  | 8  | 8        | 8   | 8  | 8  | 8  | 5  |    |    |    |
| 6   | 8.10 | 8.13 | 8.4  | 8.6 | 193                               | 257  | 12        | 18 | 10 | 10 | 10 | 10       | 10  | 10 | 10 | 10 | 10 |    |    |    |
| 7   |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |
| 8   |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |
| Total =   |      |      |      |     |                                   |      |           |    |    |    |    | 15       | 14  | 24 | 21 | 17 | 23 | 19 | 15 |    |
| Mean Neonates/Female = 23.2                         |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |
| SAMPLE ID   |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |
| Day   | pH   |      | D.O. |     | Cond. ( $\mu\text{S}/\text{cm}$ ) |      | Temp (°C) |    | A  | B  | C  | D        | E   | F  | G  | H  | I  | J  |    |    |
|   | New  | Old  | New  | Old |                                   |      |           |    | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 0   | 8.09 |      | 8.3  |     | 266                               |      | 6         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 1   | 8.13 | 8.27 | 9.5  | 8.8 | 267                               |      | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 2   | 7.92 | 8.20 | 8.2  | 8.2 | 260                               |      | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 3   | 8.19 | 8.36 | 7.9  | 1.0 | 256                               |      | 0         | 0  | 0  | 0  | 0  | 0        | 0   | 0  | 0  | 0  | 0  |    |    |    |
| 4   | 8.04 | 8.22 | 8.8  | 7.2 | 266                               |      | 4         | 7  | 4  | 6  | 0  | 6        | 0   | 6  | 5  | 7  | 4  |    |    |    |
| 5   | 7.87 | 8.08 | 8.0  | 8.0 | 167                               |      | 9         | 8  | 10 | 7  | 11 | 10       | 9   | 10 | 10 | 13 | 14 |    |    |    |
| 6   | 7.99 | 8.31 | 8.1  | 8.0 | 225                               |      | 11        | 13 | 7  | 11 | 14 | 10       | 9   | 12 | 10 | 13 | 14 |    |    |    |
| 7   |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |
| 8   |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |
| Total =   |      |      |      |     |                                   |      |           |    |    |    |    | 10       | 266 | 21 | 24 | 27 | 25 | 28 | 22 | 20 |
| Mean Neonates/Female = 25.9<br>4 Contaminated Lanes |      |      |      |     |                                   |      |           |    |    |    |    |          |     |    |    |    |    |    |    |    |

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: Precision Analytical - Chevron Cawelo

Material: Pre-Poso Creek

Test Date: 9/22/09

Project #: 15239 Test ID: 36406

Randomization: Board 2

Control Water: Lab Water (80:20)

|   | Day  | pH   | D.O. | Cond.<br>(µS/cm) | Survival / Reproduction |     |     |     |    |    |    |    |    |    |    |                             | SIGN-OFF                    |               |
|---|------|------|------|------------------|-------------------------|-----|-----|-----|----|----|----|----|----|----|----|-----------------------------|-----------------------------|---------------|
|   |      |      |      |                  | New                     | Old | New | Old | A  | B  | C  | D  | E  | F  | G  | H                           | I                           |               |
|   | 0    | 7.99 | 8.0  | 287              | 0                       | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                           | 0                           |               |
| 1 | 8.03 | 8.31 | 9.5  | 8.6              | 293                     | 6   | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                           | 0                           |               |
| 2 | 7.93 | 8.23 | 8.2  | 8.3              | 289                     | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                           | 0                           |               |
| 3 | 8.12 | 8.37 | 7.7  | 7.1              | 284                     | 0   | 0   | 0   | 0  | 5  | 4  | 5  | 0  | 0  | 0  | 0                           | 0                           |               |
| 4 | 7.93 | 8.16 | 8.9  | 1.3              | 293                     | 5   | 8   | 5   | 6  | 1  | 0  | 0  | 6  | 6  | 6  | 6                           | 6                           |               |
| 5 | 7.87 | 8.22 | 8.0  | 8.9              | 299                     | 11  | 10  | 10  | 4  | 12 | 11 | 4  | 12 | 9  | 9  | 9                           | 9                           |               |
| 6 | 7.89 | 8.10 | 8.4  | 8.8              | 260                     | 13  | 11  | 14  | 12 | 11 | 13 | 15 | 16 | 14 | 12 | 12                          | 12                          |               |
| 7 |      |      |      |                  |                         |     |     |     |    |    |    |    |    |    |    |                             |                             |               |
| 8 |      |      |      |                  |                         |     |     |     |    |    |    |    |    |    |    |                             |                             |               |
|   |      |      |      |                  | Total=                  | 29  | 29  | 26  | 29 | 28 | 29 | 26 | 29 | 29 | 27 | Mean Neonates/Female = 29.0 |                             |               |
|   | Day  | pH   | D.O. | Cond.<br>(µS/cm) | Survival / Reproduction |     |     |     |    |    |    |    |    |    |    |                             | SIGN-OFF                    |               |
|   |      |      |      |                  | New                     | Old | New | Old | A  | B  | C  | D  | E  | F  | G  | H                           | I                           |               |
|   | 0    | 7.92 | 8.1  | 339              | 6                       | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                           | 0                           |               |
| 1 | 7.91 | 8.35 | 9.5  | 8.6              | 344                     | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                           | 0                           |               |
| 2 | 7.87 | 8.21 | 8.0  | 8.8              | 335                     | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                           | 0                           |               |
| 3 | 8.02 | 8.46 | 7.8  | 7.1              | 338                     | 0   | 0   | 0   | 0  | 5  | 4  | 4  | 0  | 0  | 0  | 0                           | 0                           |               |
| 4 | 7.80 | 8.21 | 8.9  | 7.4              | 344                     | 7   | 7   | 6   | 5  | 0  | 0  | 0  | 6  | 7  | 7  | 7                           | 7                           |               |
| 5 | 7.70 | 8.29 | 9.3  | 7.2              | 341                     | 10  | 10  | 9   | 9  | 10 | 9  | 9  | 9  | 9  | 9  | 9                           | 9                           |               |
| 6 | 7.77 | 8.36 | 9.3  | 8.8              | 337                     | 10  | 11  | 9   | 12 | 10 | 11 | 13 | 12 | 13 | 12 | 13                          | 13                          |               |
| 7 |      |      |      |                  |                         |     |     |     |    |    |    |    |    |    |    |                             |                             |               |
| 8 |      |      |      |                  |                         |     |     |     |    |    |    |    |    |    |    |                             |                             |               |
|   |      |      |      |                  | Total=                  | 97  | 96  | 95  | 99 | 96 | 96 | 93 | 99 | 97 | 99 | 97                          | 99                          | *spit down vs |
|   |      |      |      |                  |                         |     |     |     |    |    |    |    |    |    |    |                             | Mean Neonates/Female = 96.2 |               |

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: Precision Analytical - Chevron Cawelo

Material: Pre-Poso Creek

Test Date: 9/22/09

Project #: 15239 Test ID: 36406

Randomization: Board 2

Control Water: Lab Water (80:20)

| Survival / Reproduction |     |      |      |                        |        |     |    |    |    | SIGN-OFF |     |     |    |                             |
|-------------------------|-----|------|------|------------------------|--------|-----|----|----|----|----------|-----|-----|----|-----------------------------|
|                         | Day | pH   | D.O. | Cond.<br>( $\mu$ S/cm) | A      | B   | C  | D  | E  | F        | G   | H   | I  | J                           |
|                         | 0   | 7.81 | 8.1  | 389                    | 0      | 0   | 0  | 0  | 0  | 0        | 0   | 0   | 0  | 0                           |
|                         | 1   | 7.83 | 8.40 | 9.4                    | 8.6    | 397 | 0  | 0  | 0  | 0        | 0   | 0   | 0  | 0                           |
|                         | 2   | 7.90 | 8.30 | 8.2                    | 8.7    | 371 | 0  | 0  | 0  | 0        | 0   | 0   | 0  | 0                           |
|                         | 3   | 7.93 | 8.44 | 7.4                    | 7.1    | 388 | 0  | 0  | 0  | 5        | 7   | 6   | 0  | 0                           |
|                         | 4   | 7.49 | 8.32 | 9.1                    | 7.2    | 395 | 6  | 6  | 6  | 0        | 0   | 6   | 6  | 7                           |
|                         | 5   | 7.73 | 8.37 | 9.2                    | 9.4    | 387 | 10 | 8  | 9  | 10       | 10  | 8   | 9  |                             |
|                         | 6   | 7.69 | 9.84 | 8.5                    | 8.0    | 375 | 14 | 12 | 14 | 12       | 10  | 11  | 13 | 15                          |
|                         | 7   |      |      |                        |        |     |    |    |    |          |     |     |    |                             |
|                         | 8   |      |      |                        |        |     |    |    |    |          |     |     |    |                             |
|                         |     |      |      |                        | Total= | 30  | 24 | 27 | 26 | 29       | 29  | 27  | 27 | 21                          |
|                         |     |      |      |                        |        |     |    |    |    |          |     |     |    | Mean Neonates/Female = 27.7 |
|                         | Day | pH   | D.O. | Cond.<br>( $\mu$ S/cm) | A      | B   | C  | D  | E  | F        | G   | H   | I  | J                           |
|                         | 0   | 7.71 | 7.8  | 441                    | 0      | 0   | 0  | 0  | 0  | 0        | 0   | 0   | 0  | 0                           |
|                         | 1   | 7.75 | 8.44 | 9.7                    | 8.4    | 451 | 0  | 0  | 0  | 0        | 0   | 0   | 0  | 0                           |
|                         | 2   | 7.90 | 8.30 | 3.2                    | 8.8    | 443 | 0  | 0  | 0  | 0        | 0   | 0   | 0  | 0                           |
|                         | 3   | 7.87 | 8.44 | 7.1                    | 7.1    | 438 | 0  | 0  | 0  | 5        | 5   | 2   | 0  | 0                           |
|                         | 4   | 7.57 | 8.38 | 9.3                    | 7.3    | 443 | 2  | 5  | 5  | 7        | 0   | 0   | 7  | 3                           |
|                         | 5   | 7.89 | 8.35 | 9.2                    | 8.1    | 437 | 6  | 3  | 6  | 8        | 9   | XNA | 7  | 8                           |
|                         | 6   | 7.60 | 8.42 | 8.5                    | 8.6    | 438 | 12 | 12 | 11 | 11       | -   | 13  | 12 | 11                          |
|                         | 7   |      |      |                        |        |     |    |    |    |          |     |     |    |                             |
|                         | 8   |      |      |                        |        |     |    |    |    |          |     |     |    |                             |
|                         |     |      |      |                        | Total= | 20  | 20 | 22 | 26 | 24       | XNA | 13  | 26 | 23                          |
|                         |     |      |      |                        |        |     |    |    |    |          |     |     |    | Mean Neonates/Female = 24.8 |

## Appendix E

### Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Pre-Poso Creek Effluent to Fathead Minnows

Eff>

## CETIS Summary Report

Report Date: 22 Oct-09 12:55 (p 1 of 2)  
 Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test |                     |                                   |                      |         |         |          | Pacific EcoRisk                    |         |         |       |        |
|--|---------------------|-----------------------------------|----------------------|---------|---------|----------|------------------------------------|---------|---------|-------|--------|
| Batch ID:                                    | 12-0163-1975        | Test Type: Growth-Survival (7d)   |                      |         |         | Analyst: | Jason Walker                       |         |         |       |        |
| Start Date:                                  | 22 Sep-09 17:40     | Protocol: EPA-821-R-02-012 (2002) |                      |         |         | Diluent: | Laboratory Water                   |         |         |       |        |
| Ending Date:                                 | 29 Sep-09 11:00     | Species: Pimephales promelas      |                      |         |         | Brine:   | Not Applicable                     |         |         |       |        |
| Duration:                                    | 6d 17h              | Source: Aquatic Biosystems, CO    |                      |         |         | Age:     | 1                                  |         |         |       |        |
| Sample ID:                                   | 18-9649-9874        | Code:                             | Eff                  |         |         | Client:  | Precision Analytical               |         |         |       |        |
| Sample Date:                                 | 21 Sep-09 07:30     | Material:                         | Effluent             |         |         | Project: | 15239                              |         |         |       |        |
| Receive Date:                                | 21 Sep-09 18:00     | Source:                           | Precision Analytical |         |         |          |                                    |         |         |       |        |
| Sample Age:                                  | 34h (4.3 °C)        | Station:                          | Pre-Poso Creek       |         |         |          |                                    |         |         |       |        |
| <b>Comparison Summary</b>                    |                     |                                   |                      |         |         |          |                                    |         |         |       |        |
| Analysis ID                                  | Endpoint            | NOEL                              | LOEL                 | TOEL    | PMSD    | TU       | Method                             |         |         |       |        |
| 16-8212-0345                                 | 7d Survival Rate    | 75                                | 100                  | 86.6    | 22.2%   | 1.33     | Dunnett's Multiple Comparison Test |         |         |       |        |
| 10-6914-4358                                 | Mean Dry Biomass-mg | 25                                | 50                   | 35.4    | 21.0%   | 4        | Dunnett's Multiple Comparison Test |         |         |       |        |
| 15-6359-0238                                 | Mean Dry Weight-mg  | 50                                | 75                   | 61.2    | 24.7%   | 2        | Dunnett's Multiple Comparison Test |         |         |       |        |
| <b>Point Estimate Summary</b>                |                     |                                   |                      |         |         |          |                                    |         |         |       |        |
| Analysis ID                                  | Endpoint            | Level                             | %                    | 95% LCL | 95% UCL | TU       | Method                             |         |         |       |        |
| 09-4550-1460                                 | 7d Survival Rate    | EC5                               | 56.3                 | 24.6    | 68.6    | 1.78     | Linear Regression (MLE)            |         |         |       |        |
|  |                     | EC10                              | 63.3                 | 33.8    | 74.2    | 1.58     |                                    |         |         |       |        |
|  |                     | EC15                              | 68.6                 | 41.9    | 78.5    | 1.46     |                                    |         |         |       |        |
|  |                     | EC20                              | 73                   | 49.4    | 82.3    | 1.37     |                                    |         |         |       |        |
|  |                     | EC25                              | 77.1                 | 56.7    | 86.1    | 1.3      |                                    |         |         |       |        |
|  |                     | EC40                              | 88.4                 | 76.5    | 101     | 1.13     |                                    |         |         |       |        |
|  |                     | EC50                              | 96                   | 86      | 119     | 1.04     |                                    |         |         |       |        |
| 18-8081-0163                                 | Mean Dry Biomass-mg | IC5                               | 26.2                 | N/A     | 33.6    | 3.82     | Linear Interpolation (ICPIN)       |         |         |       |        |
|  |                     | IC10                              | 31.3                 | N/A     | 41.9    | 3.2      |                                    |         |         |       |        |
|  |                     | IC15                              | 37.3                 | N/A     | 53.2    | 2.68     |                                    |         |         |       |        |
|  |                     | IC20                              | 44.5                 | 12.2    | 56.9    | 2.25     |                                    |         |         |       |        |
|  |                     | IC25                              | 51.2                 | 20.3    | 57.9    | 1.95     |                                    |         |         |       |        |
|  |                     | IC40                              | 62.7                 | 47.3    | 69.3    | 1.6      |                                    |         |         |       |        |
|  |                     | IC50                              | 71.7                 | 58.1    | 79      | 1.39     |                                    |         |         |       |        |
| <b>7d Survival Rate Summary</b>              |                     |                                   |                      |         |         |          |                                    |         |         |       |        |
| Conc-%                                       | Control Type        | Count                             | Mean                 | 95% LCL | 95% UCL | Min      | Max                                | Std Err | Std Dev | CV%   | Diff%  |
| 0  | Lab Water Contr     | 4                                 | 0.925                | 0.869   | 0.981   | 0.7      | 1                                  | 0.0274  | 0.15    | 16.2% | 0.0%   |
| 12.5   |                     | 4                                 | 0.969                | 0.945   | 0.992   | 0.875    | 1                                  | 0.0114  | 0.0625  | 6.45% | -4.73% |
| 25   |                     | 4                                 | 0.9                  | 0.87    | 0.93    | 0.8      | 1                                  | 0.0149  | 0.0816  | 9.07% | 2.7%   |
| 50   |                     | 4                                 | 0.875                | 0.828   | 0.922   | 0.7      | 1                                  | 0.023   | 0.126   | 14.4% | 5.41%  |
| 75   |                     | 4                                 | 0.75                 | 0.728   | 0.772   | 0.7      | 0.8                                | 0.0105  | 0.0577  | 7.7%  | 18.9%  |
| 100  |                     | 4                                 | 0.4                  | 0.309   | 0.491   | 0.1      | 0.6                                | 0.0447  | 0.245   | 61.2% | 56.8%  |
| <b>Mean Dry Biomass-mg Summary</b>           |                     |                                   |                      |         |         |          |                                    |         |         |       |        |
| Conc-%                                       | Control Type        | Count                             | Mean                 | 95% LCL | 95% UCL | Min      | Max                                | Std Err | Std Dev | CV%   | Diff%  |
| 0  | Lab Water Contr     | 4                                 | 0.339                | 0.312   | 0.366   | 0.276    | 0.434                              | 0.013   | 0.0714  | 21.1% | 0.0%   |
| 12.5   |                     | 4                                 | 0.341                | 0.332   | 0.351   | 0.309    | 0.371                              | 0.00467 | 0.0256  | 7.49% | -0.61% |
| 25   |                     | 4                                 | 0.327                | 0.317   | 0.338   | 0.296    | 0.354                              | 0.00512 | 0.028   | 8.56% | 3.39%  |
| 50   |                     | 4                                 | 0.261                | 0.252   | 0.269   | 0.227    | 0.277                              | 0.00416 | 0.0228  | 8.74% | 23.1%  |
| 75   |                     | 4                                 | 0.159                | 0.154   | 0.164   | 0.143    | 0.171                              | 0.0024  | 0.0131  | 8.27% | 53.2%  |
| 100  |                     | 4                                 | 0.0605               | 0.0391  | 0.0819  | 0.002    | 0.119                              | 0.0104  | 0.0572  | 94.5% | 82.2%  |

**CETIS Summary Report**

Report Date:

22 Oct-09 12:55 (p 2 of 2)

Test Code:

14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test |                 |        |       |         |         |       |       |         |         |       | Pacific EcoRisk |
|--|-----------------|--------|-------|---------|---------|-------|-------|---------|---------|-------|-----------------|
| Mean Dry Weight-mg Summary                   |                 |        |       |         |         |       |       |         |         |       |                 |
| Conc-%                                       | Control Type    | Count  | Mean  | 95% LCL | 95% UCL | Min   | Max   | Std Err | Std Dev | CV%   | Diff%           |
| 0  | Lab Water Contr | 4      | 0.369 | 0.346   | 0.391   | 0.293 | 0.434 | 0.011   | 0.0603  | 16.4% | 0.0%            |
| 12.5   |                 | 4      | 0.354 | 0.336   | 0.373   | 0.309 | 0.424 | 0.00899 | 0.0492  | 13.9% | 3.87%           |
| 25   |                 | 4      | 0.365 | 0.354   | 0.376   | 0.329 | 0.39  | 0.00529 | 0.029   | 7.94% | 1.0%            |
| 50   |                 | 4      | 0.304 | 0.281   | 0.326   | 0.252 | 0.386 | 0.0109  | 0.0594  | 19.6% | 17.6%           |
| 75   |                 | 4      | 0.212 | 0.209   | 0.214   | 0.204 | 0.219 | 0.0011  | 0.00604 | 2.85% | 42.6%           |
| 100  |                 | 4      | 0.114 | 0.0835  | 0.145   | 0.02  | 0.198 | 0.015   | 0.0821  | 71.9% | 69.0%           |
| 7d Survival Rate Detail                      |                 |        |       |         |         |       |       |         |         |       |                 |
| Conc-%                                       | Control Type    | Rep 1  | Rep 2 | Rep 3   | Rep 4   |       |       |         |         |       |                 |
| 0  | Lab Water Contr | 0.7    | 1     | 1       | 1       |       |       |         |         |       |                 |
| 12.5   |                 | 1      | 0.875 | 1       | 1       |       |       |         |         |       |                 |
| 25   |                 | 0.9    | 0.8   | 1       | 0.9     |       |       |         |         |       |                 |
| 50   |                 | 0.9    | 0.9   | 1       | 0.7     |       |       |         |         |       |                 |
| 75   |                 | 0.8    | 0.8   | 0.7     | 0.7     |       |       |         |         |       |                 |
| 100  |                 | 0.3    | 0.1   | 0.6     | 0.6     |       |       |         |         |       |                 |
| Mean Dry Biomass-mg Detail                   |                 |        |       |         |         |       |       |         |         |       |                 |
| Conc-%                                       | Control Type    | Rep 1  | Rep 2 | Rep 3   | Rep 4   |       |       |         |         |       |                 |
| 0  | Lab Water Contr | 0.276  | 0.293 | 0.434   | 0.353   |       |       |         |         |       |                 |
| 12.5   |                 | 0.309  | 0.371 | 0.345   | 0.339   |       |       |         |         |       |                 |
| 25   |                 | 0.348  | 0.312 | 0.354   | 0.296   |       |       |         |         |       |                 |
| 50   |                 | 0.227  | 0.277 | 0.269   | 0.27    |       |       |         |         |       |                 |
| 75   |                 | 0.168  | 0.171 | 0.153   | 0.143   |       |       |         |         |       |                 |
| 100  |                 | 0.022  | 0.002 | 0.119   | 0.099   |       |       |         |         |       |                 |
| Mean Dry Weight-mg Detail                    |                 |        |       |         |         |       |       |         |         |       |                 |
| Conc-%                                       | Control Type    | Rep 1  | Rep 2 | Rep 3   | Rep 4   |       |       |         |         |       |                 |
| 0  | Lab Water Contr | 0.394  | 0.293 | 0.434   | 0.353   |       |       |         |         |       |                 |
| 12.5   |                 | 0.309  | 0.424 | 0.345   | 0.339   |       |       |         |         |       |                 |
| 25   |                 | 0.387  | 0.39  | 0.354   | 0.329   |       |       |         |         |       |                 |
| 50   |                 | 0.252  | 0.308 | 0.269   | 0.386   |       |       |         |         |       |                 |
| 75   |                 | 0.21   | 0.214 | 0.219   | 0.204   |       |       |         |         |       |                 |
| 100  |                 | 0.0733 | 0.02  | 0.198   | 0.165   |       |       |         |         |       |                 |

## CETIS Analytical Report

Report Date: 22 Oct-09 12:55 (p 3 of 4)  
 Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test |                               |  |             |          |                            |                     | Pacific EcoRisk        |                    |         |       |        |  |  |  |
|--|-------------------------------|--|-------------|----------|----------------------------|---------------------|------------------------|--------------------|---------|-------|--------|--|--|--|
| Analysis ID: 16-8212-0345                    |                               | Endpoint: 7d Survival Rate                 |             |          | CETIS Version: CETISv1.7.0 |                     |                        |                    |         |       |        |  |  |  |
| Analyzed: 22 Oct-09 12:54                    |                               | Analysis: Parametric-Control vs Treatments |             |          | Official Results: Yes      |                     |                        |                    |         |       |        |  |  |  |
| Data Transform                               | Zeta                          | Alt Hyp                                    | Monte Carlo | NOEL     | LOEL                       | TOEL                | TU                     | PMSD               |         |       |        |  |  |  |
| Angular (Corrected)                          | 0                             | C > T                                      | Not Run     | 75       | 100                        | 86.6                | 1.33                   | 22.2%              |         |       |        |  |  |  |
| Dunnett's Multiple Comparison Test           |                               |  |             |          |                            |                     |                        |                    |         |       |        |  |  |  |
| Control                                      | vs                            | Conc-%                                     | Test Stat   | Critical | MSD                        | P-Value             | Decision(5%)           |                    |         |       |        |  |  |  |
| Lab Water Control                            | 12.5                          |  | -0.447      | 2.41     | 0.294                      | 0.9319              | Non-Significant Effect |                    |         |       |        |  |  |  |
|  | 25                            |  | 0.43        | 2.41     | 0.294                      | 0.6776              | Non-Significant Effect |                    |         |       |        |  |  |  |
|  | 50                            |  | 0.667       | 2.41     | 0.294                      | 0.5730              | Non-Significant Effect |                    |         |       |        |  |  |  |
|  | 75                            |  | 2.11        | 2.41     | 0.294                      | 0.0863              | Non-Significant Effect |                    |         |       |        |  |  |  |
|  | 100*                          |  | 5.23        | 2.41     | 0.294                      | 0.0002              | Significant Effect     |                    |         |       |        |  |  |  |
| ANOVA Table                                  |                               |  |             |          |                            |                     |                        |                    |         |       |        |  |  |  |
| Source                                       | Sum Squares                   |  | Mean Square |          | DF                         | F Stat              | P-Value                | Decision(5%)       |         |       |        |  |  |  |
| Between                                      | 1.310958                      |  | 0.2621916   |          | 5                          | 8.78                | 0.0002                 | Significant Effect |         |       |        |  |  |  |
| Error  | 0.537285                      |  | 0.02984917  |          | 18                         |                     |                        |                    |         |       |        |  |  |  |
| Total  | 1.848243                      |  | 0.2920407   |          | 23                         |                     |                        |                    |         |       |        |  |  |  |
| ANOVA Assumptions                            |                               |  |             |          |                            |                     |                        |                    |         |       |        |  |  |  |
| Attribute                                    | Test                          |  | Test Stat   | Critical | P-Value                    | Decision(1%)        |                        |                    |         |       |        |  |  |  |
| Variances                                    | Bartlett Equality of Variance |  | 6.1         | 15.1     | 0.2966                     | Equal Variances     |                        |                    |         |       |        |  |  |  |
| Distribution                                 | Shapiro-Wilk Normality        |  | 0.935       |          | 0.1292                     | Normal Distribution |                        |                    |         |       |        |  |  |  |
| 7d Survival Rate Summary                     |                               |  |             |          |                            |                     |                        |                    |         |       |        |  |  |  |
| Conc-%                                       | Control Type                  | Count                                      | Mean        | 95% LCL  | 95% UCL                    | Min                 | Max                    | Std Err            | Std Dev | CV%   | Diff%  |  |  |  |
| 0  | Lab Water Contr               | 4  | 0.925       | 0.868    | 0.982                      | 0.7                 | 1                      | 0.0279             | 0.15    | 16.2% | 0.0%   |  |  |  |
| 12.5   |                               | 4  | 0.969       | 0.945    | 0.993                      | 0.875               | 1                      | 0.0116             | 0.0625  | 6.45% | -4.73% |  |  |  |
| 25   |                               | 4  | 0.9         | 0.869    | 0.931                      | 0.8                 | 1                      | 0.0152             | 0.0816  | 9.07% | 2.7%   |  |  |  |
| 50   |                               | 4  | 0.875       | 0.827    | 0.923                      | 0.7                 | 1                      | 0.0234             | 0.126   | 14.4% | 5.41%  |  |  |  |
| 75   |                               | 4  | 0.75        | 0.728    | 0.772                      | 0.7                 | 0.8                    | 0.0107             | 0.0577  | 7.7%  | 18.9%  |  |  |  |
| 100  |                               | 4  | 0.4         | 0.307    | 0.493                      | 0.1                 | 0.6                    | 0.0455             | 0.245   | 61.2% | 56.8%  |  |  |  |
| Angular (Corrected) Transformed Summary      |                               |  |             |          |                            |                     |                        |                    |         |       |        |  |  |  |
| Conc-%                                       | Control Type                  | Count                                      | Mean        | 95% LCL  | 95% UCL                    | Min                 | Max                    | Std Err            | Std Dev | CV%   | Diff%  |  |  |  |
| 0  | Lab Water Cont                | 4  | 1.31        | 1.23     | 1.39                       | 0.991               | 1.41                   | 0.0391             | 0.21    | 16.1% | 0.0%   |  |  |  |
| 12.5   |                               | 4  | 1.36        | 1.32     | 1.4                        | 1.21                | 1.41                   | 0.0188             | 0.101   | 7.44% | -4.18% |  |  |  |
| 25   |                               | 4  | 1.25        | 1.21     | 1.3                        | 1.11                | 1.41                   | 0.0231             | 0.125   | 9.93% | 4.02%  |  |  |  |
| 50   |                               | 4  | 1.23        | 1.16     | 1.29                       | 0.991               | 1.41                   | 0.0323             | 0.174   | 14.2% | 6.24%  |  |  |  |
| 75   |                               | 4  | 1.05        | 1.02     | 1.07                       | 0.991               | 1.11                   | 0.0124             | 0.067   | 6.38% | 19.7%  |  |  |  |
| 100  |                               | 4  | 0.668       | 0.565    | 0.772                      | 0.322               | 0.886                  | 0.0506             | 0.273   | 40.8% | 48.9%  |  |  |  |

# CETIS Analytical Report

Report Date: 22 Oct-09 12:55 (p 4 of 4)  
Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test           |  |  |   | Pacific EcoRisk |
|--|--|--|---|-----------------|
| Analysis ID: 16-8212-0345<br>Analyzed: 22 Oct-09 12:54 | Endpoint: 7d Survival Rate<br>Analysis: Parametric-Control vs Treatments |  | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                 |
| <b>Graphics</b>  |  |  |   |                 |

7d Survival Rate

Conc-%

Reject Null

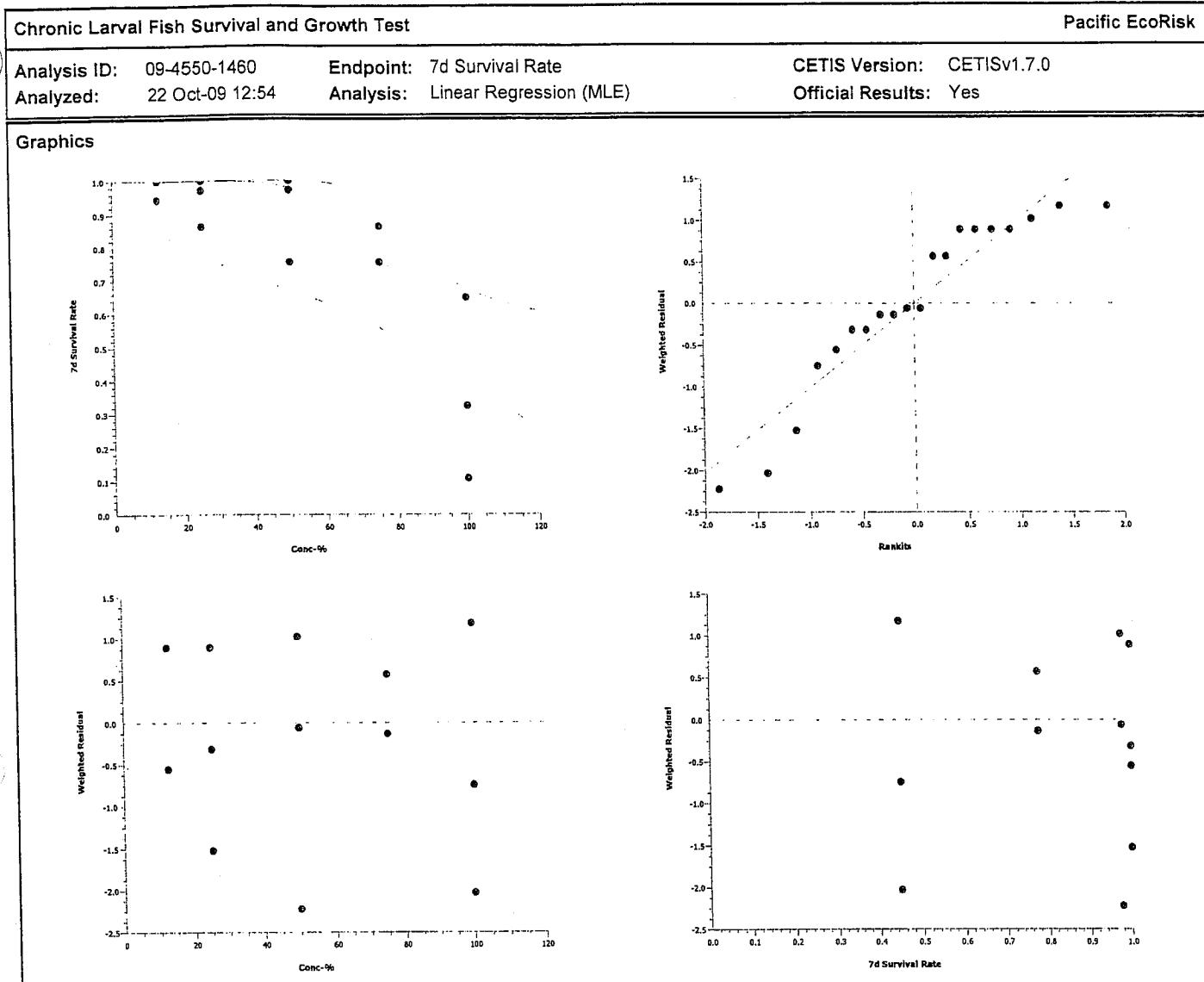
Centered Corr. Angle

Ranks

## CETIS Analytical Report

Report Date: 22 Oct-09 12:55 (p 1 of 2)  
 Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test |                                   |                   |           |                         |                   |                         |                           | Pacific EcoRisk |                               |    |    |  |
|--|-----------------------------------|-------------------|-----------|-------------------------|-------------------|-------------------------|---------------------------|-----------------|-------------------------------|----|----|--|
| Analysis ID: 09-4550-1460                    | Endpoint: 7d Survival Rate        |                   |           |                         | CETIS Version:    | CETISv1.7.0             |                           |                 |                               |    |    |  |
| Analyzed: 22 Oct-09 12:54                    | Analysis: Linear Regression (MLE) |                   |           |                         | Official Results: | Yes                     |                           |                 |                               |    |    |  |
| <b>Linear Regression Options</b>             |                                   |                   |           |                         |                   |                         |                           |                 |                               |    |    |  |
| Model Function                               |                                   | Threshold Option  |           | Threshold               | Optimized Pooled  | Het Corr                | Weighted                  |                 |                               |    |    |  |
| Log-Normal [NED=A+B*log(X)]                  |                                   | Control Threshold |           | 0.075                   | Yes               | No                      | No                        | Yes             |                               |    |    |  |
| <b>Regression Summary</b>                    |                                   |                   |           |                         |                   |                         |                           |                 |                               |    |    |  |
| Iters  | LL                                | AICc              | Mu        | Sigma                   | G Stat            | Chi-Sq                  | Critical                  | P-Value         | Decision(5%)                  |    |    |  |
| 23   | -46.2                             | 97.1              | -1.28     | 0.141                   | 0.407             | 16                      | 28.9                      | 0.5950          | Non-Significant Heterogeneity |    |    |  |
| <b>Point Estimates</b>                       |                                   |                   |           |                         |                   |                         |                           |                 |                               |    |    |  |
| Level  | %                                 | 95% LCL           | 95% UCL   | TU                      | 95% LCL           | 95% UCL                 |                           |                 |                               |    |    |  |
| EC5  | 56.3                              | 24.6              | 68.6      | 1.78                    | 1.46              | 4.07                    |                           |                 |                               |    |    |  |
| EC10   | 63.3                              | 33.8              | 74.2      | 1.58                    | 1.35              | 2.96                    |                           |                 |                               |    |    |  |
| EC15   | 68.6                              | 41.9              | 78.5      | 1.46                    | 1.27              | 2.39                    |                           |                 |                               |    |    |  |
| EC20   | 73                                | 49.4              | 82.3      | 1.37                    | 1.22              | 2.02                    |                           |                 |                               |    |    |  |
| EC25   | 77.1                              | 56.7              | 86.1      | 1.3                     | 1.16              | 1.76                    |                           |                 |                               |    |    |  |
| EC40   | 88.4                              | 76.5              | 101       | 1.13                    | 0.988             | 1.31                    |                           |                 |                               |    |    |  |
| EC50   | 96                                | 86                | 119       | 1.04                    | 0.842             | 1.16                    |                           |                 |                               |    |    |  |
| <b>Regression Parameters</b>                 |                                   |                   |           |                         |                   |                         |                           |                 |                               |    |    |  |
| Parameter                                    | Estimate                          | Std Error         | 95% LCL   | 95% UCL                 | t Stat            | P-Value                 | Decision(5%)              |                 |                               |    |    |  |
| Threshold                                    | 0.0738                            | 0.023             | 0.0287    | 0.119                   | 3.21              | 0.0049                  | Significant Parameter     |                 |                               |    |    |  |
| Slope  | 7.1                               | 2.31              | 2.57      | 11.6                    | 3.07              | 0.0066                  | Significant Parameter     |                 |                               |    |    |  |
| Intercept                                    | -9.07                             | 4.49              | -17.9     | -0.265                  | -2.02             | 0.0586                  | Non-Significant Parameter |                 |                               |    |    |  |
| <b>Residual Analysis</b>                     |                                   |                   |           |                         |                   |                         |                           |                 |                               |    |    |  |
| Attribute                                    | Method                            |                   | Test Stat | Critical                | P-Value           | Decision(5%)            |                           |                 |                               |    |    |  |
| Variances                                    | Mod Levene Equality of Variance   |                   | 1.19      | 3.06                    | 0.3536            | Equal Variances         |                           |                 |                               |    |    |  |
| Distribution                                 | Shapiro-Wilk Normality            |                   | 0.893     |                         | 0.0308            | Non-normal Distribution |                           |                 |                               |    |    |  |
| <b>7d Survival Rate Summary</b>              |                                   |                   |           | Calculated Variate(A/B) |                   |                         |                           |                 |                               |    |    |  |
| Conc-%                                       | Control Type                      | Count             | Mean      | Min                     | Max               | Std Err                 | Std Dev                   | CV%             | Diff%                         | A  | B  |  |
| 0  | Lab Water Contr                   | 4                 | 0.925     | 0.7                     | 1                 | 0.0274                  | 0.15                      | 16.2%           | 0.0%                          | 37 | 40 |  |
| 12.5   |                                   | 4                 | 0.969     | 0.875                   | 1                 | 0.0114                  | 0.0625                    | 6.45%           | -4.73%                        | 37 | 38 |  |
| 25   |                                   | 4                 | 0.9       | 0.8                     | 1                 | 0.0149                  | 0.0816                    | 9.07%           | 2.7%                          | 36 | 40 |  |
| 50   |                                   | 4                 | 0.875     | 0.7                     | 1                 | 0.023                   | 0.126                     | 14.4%           | 5.41%                         | 35 | 40 |  |
| 75   |                                   | 4                 | 0.75      | 0.7                     | 0.8               | 0.0105                  | 0.0577                    | 7.7%            | 18.9%                         | 30 | 40 |  |
| 100  |                                   | 4                 | 0.4       | 0.1                     | 0.6               | 0.0447                  | 0.245                     | 61.2%           | 56.8%                         | 16 | 40 |  |
| <b>7d Survival Rate Detail</b>               |                                   |                   |           |                         |                   |                         |                           |                 |                               |    |    |  |
| Conc-%                                       | Control Type                      | Rep 1             | Rep 2     | Rep 3                   | Rep 4             |                         |                           |                 |                               |    |    |  |
| 0  | Lab Water Control                 | 0.7               | 1         | 1                       | 1                 |                         |                           |                 |                               |    |    |  |
| 12.5   |                                   | 1                 | 0.875     | 1                       | 1                 |                         |                           |                 |                               |    |    |  |
| 25   |                                   | 0.9               | 0.8       | 1                       | 0.9               |                         |                           |                 |                               |    |    |  |
| 50   |                                   | 0.9               | 0.9       | 1                       | 0.7               |                         |                           |                 |                               |    |    |  |
| 75   |                                   | 0.8               | 0.8       | 0.7                     | 0.7               |                         |                           |                 |                               |    |    |  |
| 100  |                                   | 0.3               | 0.1       | 0.6                     | 0.6               |                         |                           |                 |                               |    |    |  |

**CETIS Analytical Report**Report Date: 22 Oct-09 12:55 (p 2 of 2)  
Test Code: 14-1809-0918/36403

## CETIS Analytical Report

Report Date: 22 Oct-09 12:55 (p 2 of 4)  
 Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test           |                               |   |             |          |   |                     | Pacific EcoRisk        |         |         |       |        |
|--|-------------------------------|---|-------------|----------|---|---------------------|------------------------|---------|---------|-------|--------|
| Analysis ID: 10-6914-4358<br>Analyzed: 22 Oct-09 12:55 |                               | Endpoint: Mean Dry Biomass-mg<br>Analysis: Parametric-Control vs Treatments |             |          | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                     |                        |         |         |       |        |
| Data Transform   | Zeta                          | Alt Hyp   | Monte Carlo | NOEL     | LOEL  | TOEL                | TU                     | PMSD    |         |       |        |
| Untransformed  | 0                             | C > T   | Not Run     | 25       | 50  | 35.4                | 4                      | 21.0%   |         |       |        |
| Dunnett's Multiple Comparison Test                     |                               |   |             |          |   |                     |                        |         |         |       |        |
| Control  | vs                            | Conc-%  | Test Stat   | Critical | MSD   | P-Value             | Decision(5%)           |         |         |       |        |
| Lab Water Control                                      | 12.5                          |   | -0.0697     | 2.41     | 0.0712  | 0.8530              | Non-Significant Effect |         |         |       |        |
|  | 25                            |   | 0.389       | 2.41     | 0.0712  | 0.6947              | Non-Significant Effect |         |         |       |        |
|  | 50*                           |   | 2.65        | 2.41     | 0.0712  | 0.0316              | Significant Effect     |         |         |       |        |
|  | 75*                           |   | 6.09        | 2.41     | 0.0712  | <0.0001             | Significant Effect     |         |         |       |        |
|  | 100*                          |   | 9.41        | 2.41     | 0.0712  | <0.0001             | Significant Effect     |         |         |       |        |
| ANOVA Table  |                               |   |             |          |   |                     |                        |         |         |       |        |
| Source   | Sum Squares                   |   | Mean Square | DF       | F Stat  | P-Value             | Decision(5%)           |         |         |       |        |
| Between  | 0.266184                      |   | 0.05323681  | 5        | 30.4  | <0.0001             | Significant Effect     |         |         |       |        |
| Error  | 0.03150254                    |   | 0.001750141 | 18       |   |                     |                        |         |         |       |        |
| Total  | 0.2976866                     |   | 0.05498695  | 23       |   |                     |                        |         |         |       |        |
| ANOVA Assumptions                                      |                               |   |             |          |   |                     |                        |         |         |       |        |
| Attribute  | Test                          |   | Test Stat   | Critical | P-Value   | Decision(1%)        |                        |         |         |       |        |
| Variances  | Bartlett Equality of Variance |   | 9.63        | 15.1     | 0.0864  | Equal Variances     |                        |         |         |       |        |
| Distribution   | Shapiro-Wilk Normality        |   | 0.969       |          | 0.6306  | Normal Distribution |                        |         |         |       |        |
| Mean Dry Biomass-mg Summary                            |                               |   |             |          |   |                     |                        |         |         |       |        |
| Conc-%   | Control Type                  | Count   | Mean        | 95% LCL  | 95% UCL   | Min                 | Max                    | Std Err | Std Dev | CV%   | Diff%  |
| 0  | Lab Water Contr               | 4   | 0.339       | 0.312    | 0.366   | 0.276               | 0.434                  | 0.0133  | 0.0714  | 21.1% | 0.0%   |
| 12.5   |                               | 4   | 0.341       | 0.331    | 0.351   | 0.309               | 0.371                  | 0.00475 | 0.0256  | 7.49% | -0.61% |
| 25   |                               | 4   | 0.327       | 0.317    | 0.338   | 0.296               | 0.354                  | 0.0052  | 0.028   | 8.56% | 3.39%  |
| 50   |                               | 4   | 0.261       | 0.252    | 0.269   | 0.227               | 0.277                  | 0.00423 | 0.0228  | 8.74% | 23.1%  |
| 75   |                               | 4   | 0.159       | 0.154    | 0.164   | 0.143               | 0.171                  | 0.00244 | 0.0131  | 8.27% | 53.2%  |
| 100  |                               | 4   | 0.0605      | 0.0387   | 0.0823  | 0.002               | 0.119                  | 0.0106  | 0.0572  | 94.5% | 82.2%  |
| Graphics   |                               |   |             |          |   |                     |                        |         |         |       |        |
|  |                               |   |             |          |   |                     |                        |         |         |       |        |

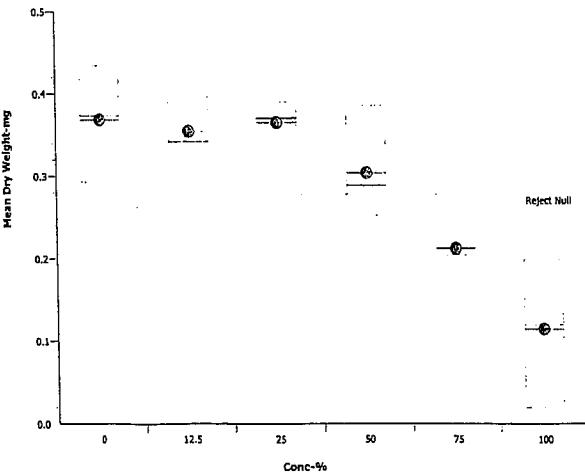
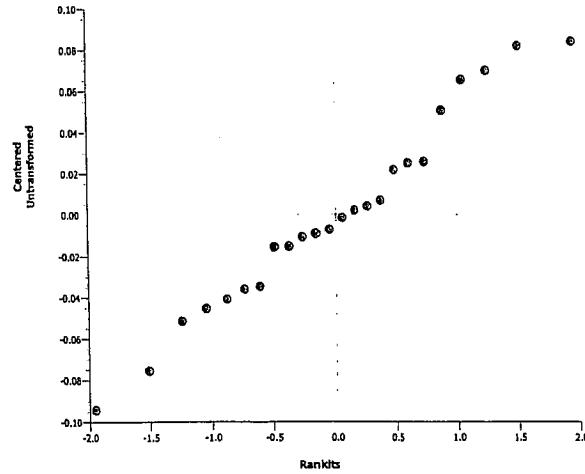
# CETIS Analytical Report

Report Date: 22 Oct-09 12:55 (p 1 of 1)  
 Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test           |   |         |                    |            |   | Pacific EcoRisk |         |       |        |
|--|---|---------|--------------------|------------|---|-----------------|---------|-------|--------|
| Analysis ID: 18-8081-0163<br>Analyzed: 22 Oct-09 12:55 | Endpoint: Mean Dry Biomass-mg<br>Analysis: Linear Interpolation (ICPIN) |         |                    |            | CETIS Version: CETISv1.7.0<br>Official Results: Yes |                 |         |       |        |
| Linear Interpolation Options                           |   |         |                    |            |   |                 |         |       |        |
| X Transform  | Y Transform   | Seed    | Resamples          | Exp 95% CL | Method  |                 |         |       |        |
| Log(X+1)   | Linear  | 57951   | 200                | Yes        | Two-Point Interpolation                             |                 |         |       |        |
| Point Estimates  |   |         |                    |            |   |                 |         |       |        |
| Level  | %   | 95% LCL | 95% UCL            | TU         | 95% LCL   | 95% UCL         |         |       |        |
| IC5  | 26.2  | N/A     | 33.6               | 3.82       | 2.98  | N/A             |         |       |        |
| IC10   | 31.3  | N/A     | 41.9               | 3.2        | 2.39  | N/A             |         |       |        |
| IC15   | 37.3  | N/A     | 53.2               | 2.68       | 1.88  | N/A             |         |       |        |
| IC20   | 44.5  | 12.2    | 56.9               | 2.25       | 1.76  | 8.21            |         |       |        |
| IC25   | 51.2  | 20.3    | 57.9               | 1.95       | 1.73  | 4.92            |         |       |        |
| IC40   | 62.7  | 47.3    | 69.3               | 1.6        | 1.44  | 2.12            |         |       |        |
| IC50   | 71.7  | 58.1    | 79                 | 1.39       | 1.27  | 1.72            |         |       |        |
| Mean Dry Biomass-mg Summary                            |   |         | Calculated Variate |            |   |                 |         |       |        |
| Conc-%   | Control Type  | Count   | Mean               | Min        | Max   | Std Err         | Std Dev | CV%   | Diff%  |
| 0  | Lab Water Contr   | 4       | 0.339              | 0.276      | 0.434   | 0.013           | 0.0714  | 21.1% | 0.0%   |
| 12.5   |   | 4       | 0.341              | 0.309      | 0.371   | 0.00467         | 0.0256  | 7.49% | -0.61% |
| 25   |   | 4       | 0.327              | 0.296      | 0.354   | 0.00512         | 0.028   | 8.56% | 3.39%  |
| 50   |   | 4       | 0.261              | 0.227      | 0.277   | 0.00416         | 0.0228  | 8.74% | 23.1%  |
| 75   |   | 4       | 0.159              | 0.143      | 0.171   | 0.0024          | 0.0131  | 8.27% | 53.2%  |
| 100  |   | 4       | 0.0605             | 0.002      | 0.119   | 0.0104          | 0.0572  | 94.5% | 82.2%  |
| Mean Dry Biomass-mg Detail                             |   |         |                    |            |   |                 |         |       |        |
| Conc-%   | Control Type  | Rep 1   | Rep 2              | Rep 3      | Rep 4   |                 |         |       |        |
| 0  | Lab Water Control   | 0.276   | 0.293              | 0.434      | 0.353   |                 |         |       |        |
| 12.5   |   | 0.309   | 0.371              | 0.345      | 0.339   |                 |         |       |        |
| 25   |   | 0.348   | 0.312              | 0.354      | 0.296   |                 |         |       |        |
| 50   |   | 0.227   | 0.277              | 0.269      | 0.27  |                 |         |       |        |
| 75   |   | 0.168   | 0.171              | 0.153      | 0.143   |                 |         |       |        |
| 100  |   | 0.022   | 0.002              | 0.119      | 0.099   |                 |         |       |        |
| Graphics   |   |         |                    |            |   |                 |         |       |        |
|  |   |         |                    |            |   |                 |         |       |        |

## CETIS Analytical Report

Report Date: 22 Oct-09 12:55 (p 1 of 4)  
 Test Code: 14-1809-0918/36403

| Chronic Larval Fish Survival and Growth Test  |                               |  |             |             |  |                     | Pacific EcoRisk        |                    |         |       |       |
|---|-------------------------------|--|-------------|-------------|--|---------------------|------------------------|--------------------|---------|-------|-------|
| Analysis ID: 15-6359-0238   |                               | Endpoint: Mean Dry Weight-mg               |             |             | CETIS Version: CETISv1.7.0   |                     |                        |                    |         |       |       |
| Analyzed: 22 Oct-09 12:55   |                               | Analysis: Parametric-Control vs Treatments |             |             | Official Results: Yes  |                     |                        |                    |         |       |       |
| Data Transform  |                               | Zeta                                       | Alt Hyp     | Monte Carlo | NOEL   | LOEL                | TOEL                   | TU                 | PMSD    |       |       |
| Untransformed   |                               | 0  | C > T       | Not Run     | 50   | 75                  | 61.2                   | 2                  | 24.7%   |       |       |
| Dunnett's Multiple Comparison Test  |                               |  |             |             |  |                     |                        |                    |         |       |       |
| Control   | vs                            | Conc-%                                     | Test Stat   | Critical    | MSD  | P-Value             | Decision(5%)           |                    |         |       |       |
| Lab Water Control   | 12.5                          |  | 0.376       | 2.41        | 0.0911   | 0.6997              | Non-Significant Effect |                    |         |       |       |
|   | 25                            |  | 0.0973      | 2.41        | 0.0911   | 0.8031              | Non-Significant Effect |                    |         |       |       |
|   | 50                            |  | 1.71        | 2.41        | 0.0911   | 0.1661              | Non-Significant Effect |                    |         |       |       |
|   | 75*                           |  | 4.15        | 2.41        | 0.0911   | 0.0014              | Significant Effect     |                    |         |       |       |
|   | 100*                          |  | 6.72        | 2.41        | 0.0911   | <0.0001             | Significant Effect     |                    |         |       |       |
| ANOVA Table   |                               |  |             |             |  |                     |                        |                    |         |       |       |
| Source  | Sum Squares                   |  | Mean Square |             | DF   | F Stat              | P-Value                | Decision(5%)       |         |       |       |
| Between   | 0.2123016                     |  | 0.04246031  |             | 5  | 14.8                | <0.0001                | Significant Effect |         |       |       |
| Error   | 0.05159388                    |  | 0.002866327 |             | 18   |                     |                        |                    |         |       |       |
| Total   | 0.2638955                     |  | 0.04532664  |             | 23   |                     |                        |                    |         |       |       |
| ANOVA Assumptions   |                               |  |             |             |  |                     |                        |                    |         |       |       |
| Attribute   | Test                          |  | Test Stat   | Critical    | P-Value  | Decision(1%)        |                        |                    |         |       |       |
| Variances   | Bartlett Equality of Variance |  | 11.8        | 15.1        | 0.0370   | Equal Variances     |                        |                    |         |       |       |
| Distribution  | Shapiro-Wilk Normality        |  | 0.971       |             | 0.6913   | Normal Distribution |                        |                    |         |       |       |
| Mean Dry Weight-mg Summary  |                               |  |             |             |  |                     |                        |                    |         |       |       |
| Conc-%  | Control Type                  | Count                                      | Mean        | 95% LCL     | 95% UCL  | Min                 | Max                    | Std Err            | Std Dev | CV%   | Diff% |
| 0   | Lab Water Contr               | 4  | 0.369       | 0.346       | 0.391  | 0.293               | 0.434                  | 0.0112             | 0.0603  | 16.4% | 0.0%  |
| 12.5  |                               | 4  | 0.354       | 0.336       | 0.373  | 0.309               | 0.424                  | 0.00914            | 0.0492  | 13.9% | 3.87% |
| 25  |                               | 4  | 0.365       | 0.354       | 0.376  | 0.329               | 0.39                   | 0.00538            | 0.029   | 7.94% | 1.0%  |
| 50  |                               | 4  | 0.304       | 0.281       | 0.326  | 0.252               | 0.386                  | 0.011              | 0.0594  | 19.6% | 17.6% |
| 75  |                               | 4  | 0.212       | 0.209       | 0.214  | 0.204               | 0.219                  | 0.00112            | 0.00604 | 2.85% | 42.6% |
| 100   |                               | 4  | 0.114       | 0.083       | 0.145  | 0.02                | 0.198                  | 0.0152             | 0.0821  | 71.9% | 69.0% |
| Graphics  |                               |  |             |             |  |                     |                        |                    |         |       |       |
|  |                               |  |             |             |  |                     |                        |                    |         |       |       |

## 7 Day Chronic Fathead Minnow Toxicity Test Data

Client: Precision Analytical - Chevron Cawelo  
 Test Material: Pre-Poso Creek  
 Test ID#: 36403 Project #: 15239  
 Test Date: 9/22/09 Randomization: 4-6-3  
 Organism Log#: 4783 Age: 448 hrs  
 Organism Supplier: ABS Control/Diluent: EPAMH  
 Control Water Batch: 1244

| Treatment<br>(% Effluent) | Temp<br>(°C) | pH   |      | D.O. (mg/L) |      | Conductivity<br>(µS/cm) | # Live Organisms |    |    |    | SIGN-OFF                |
|---------------------------|--------------|------|------|-------------|------|-------------------------|------------------|----|----|----|-------------------------|
|                           |              | new  | old  | new         | old  |                         | A                | B  | C  | D  |                         |
| Lab Water Control         | 25.7         | 7.99 |      | 9.3         |      | 323                     | 10               | 10 | 10 | 10 | Date: 9/22/09           |
| 12.5%                     | 25.7         | 8.03 |      | 8.9         |      | 330                     | 10               | 10 | 10 | 10 | Sample ID: 22774        |
| 25%                       | 25.7         | 7.99 |      | 8.9         |      | 345                     | 10               | 10 | 10 | 10 | Test Solution Prep: 8m  |
| 50%                       | 25.7         | 7.87 |      | 7.8         |      | 376                     | 10               | 10 | 10 | 10 | New WQ: MDM             |
| 75%                       | 25.7         | 7.76 |      | 7.4         |      | 406                     | 10               | 10 | 10 | 10 | Initiation Time: 1740   |
| 100%                      | 25.7         | 7.72 |      | 7.1         |      | 434                     | 10               | 10 | 10 | 10 | Initiation Signoff: KQ  |
| Meter ID                  | 22A          | pH11 |      | DO12        |      | Eco4                    |                  |    |    |    |                         |
| Lab Water Control         | 25.8         | 7.96 | 8.05 | 8.0         | 8.0  | 367                     | 10               | 10 | 10 | 10 | Date: 9.23.09           |
| 12.5%                     | 25.8         | 8.10 | 8.02 | 8.3         | 8.0  | 379                     | 10               | 8  | 10 | 10 | Sample ID: 22774        |
| 25%                       | 25.8         | 8.01 | 7.97 | 8.4         | 7.7  | 387                     | 10               | 10 | 10 | 10 | Test Solution Prep: EK  |
| 50%                       | 25.8         | 7.86 | 8.01 | 8.6         | 7.6  | 407                     | 10               | 10 | 10 | 10 | New WQ: EK              |
| 75%                       | 25.8         | 7.79 | 8.03 | 8.8         | 7.7  | 421                     | 10               | 10 | 10 | 10 | Renewal Time: 0930      |
| 100%                      | 25.8         | 7.71 | 8.07 | 8.8         | 7.7  | 441                     | 10               | 10 | 10 | 10 | Renewal Signoff: EK     |
| Meter ID                  | 22A          | pH14 | pH14 | DO12        | DO12 | Eco8                    |                  |    |    |    | Old WQ: KQ              |
| Lab Water Control         | 25.7         | 7.66 | 7.87 | 9.4         | 7.2  | 364                     | 10               | 10 | 10 | 10 | Date: 9/24/09           |
| 12.5%                     | 25.7         | 7.87 | 7.98 | 8.9         | 7.1  | 374                     | 10               | 8  | 10 | 10 | Sample ID: 22774        |
| 25%                       | 25.7         | 7.95 | 8.01 | 9.1         | 7.2  | 383                     | 10               | 10 | 10 | 10 | Test Solution Prep: P15 |
| 50%                       | 25.7         | 7.93 | 8.07 | 9.0         | 7.2  | 404                     | 10               | 10 | 10 | 10 | New WQ: MDM             |
| 75%                       | 25.7         | 7.89 | 8.10 | 8.9         | 7.1  | 422                     | 10               | 10 | 9  | 10 | Renewal Time: 1330      |
| 100%                      | 25.7         | 7.80 | 8.15 | 8.6         | 7.1  | 443                     | 10               | 10 | 10 | 10 | Renewal Signoff: KQ     |
| Meter ID                  | 22A          | pH11 | pH11 | DO12        | DO12 | Eco4                    |                  |    |    |    | Old WQ: KQ              |
| Lab Water Control         | 25.7         | 8.22 | 7.67 | 8.2         | 7.5  | 361                     | 8                | 10 | 10 | 10 | Date: 9/25/09           |
| 12.5%                     | 25.7         | 8.18 | 7.89 | 8.2         | 7.2  | 371                     | 10               | 8  | 10 | 10 | Sample ID: 22774        |
| 25%                       | 25.7         | 8.07 | 7.97 | 8.2         | 7.1  | 380                     | 10               | 10 | 10 | 10 | Test Solution Prep: JPL |
| 50%                       | 25.7         | 7.93 | 8.10 | 8.2         | 7.0  | 399                     | 10               | 10 | 10 | 10 | New WQ: MDM             |
| 75%                       | 25.7         | 7.83 | 8.12 | 8.2         | 6.9  | 418                     | 10               | 10 | 9  | 10 | Renewal Time: 1220      |
| 100%                      | 25.7         | 7.75 | 8.17 | 8.1         | 6.9  | 434                     | 10               | 9  | 10 | 10 | Renewal Signoff: 8m     |
| Meter ID                  | 22A          | pH11 | pH11 | DO13        | DO13 | Eco4                    |                  |    |    |    | Old WQ: MDM             |

## 7 Day Chronic Fathead Minnow Toxicity Test Data

Client: Precision Analytical - Chevron Cawelo  
 Test Material: Pre-Poso Creek  
 Test ID#: 36403 Project #: 15239  
 Test Date: 9/22/09 Randomization: M-B-3

Organism Log#: 4783 Age: <48 hrs  
 Organism Supplier: ABS  
 Control/Diluent: EPAMH  
 Control Water Batch: 1244

| Treatment<br>(% Effluent) | Temp<br>(°C) | pH   |      | D.O. (mg/L) |      | Conductivity<br>(µS/cm) | # Live Organisms |    |    |  | SIGN-OFF  |
|---------------------------|--------------|------|------|-------------|------|-------------------------|------------------|----|----|--|---|
|                           |              | new  | old  | new         | old  |                         | A                | B  | C  | D  |   |
| Lab Water Control         | 25.9         | 8.18 | 7.90 | 0.9         | 7.1  | 369                     | 7                | 10 | 10 | 10   | Date: 9/26/09<br>Sample ID: 22774<br>Test Solution Prep: JPC<br>New WQ: Q.D.<br>Renewal Time: 1620<br>Renewal Signoff: 8m<br>Old WQ: BH |
| 12.5%                     | 25.9         | 8.02 | 7.79 | 9.0         | 7.4  | 379                     | 10               | 7  | 10 | 10   |   |
| 25%                       | 25.9         | 7.90 | 7.86 | 9.2         | 7.0  | 387                     | 10               | 8  | 10 | 10   |   |
| 50%                       | 25.9         | 7.74 | 7.50 | 9.3         | 7.4  | 400 <sup>403</sup>      | 10               | 9  | 10 | 7  |   |
| 75%                       | 25.9         | 7.59 | 7.75 | 9.3         | 6.8  | 421                     | 10               | 10 | 8  | 8  |   |
| 100%                      | 25.9         | 7.44 | 7.89 | 8.6         | 6.5  | 432                     | 7                | 7  | 10 | 9  |   |
| Meter ID                  | 22A          | pH03 | pH03 | D013        | D013 | EC03                    |                  |    |    |  |   |
| Lab Water Control         | 25.9         | 7.91 | 8.93 | 9.0         | 7.7  | 305                     | 7                | 10 | 10 | 10   | Date: 9/27/09<br>Sample ID: 22774<br>Test Solution Prep: JPC<br>New WQ: BH<br>Renewal Time: 1115<br>Renewal Signoff: 2e<br>Old WQ: BH   |
| 12.5%                     | 25.9         | 7.80 | 8.23 | 9.2         | 7.6  | 323                     | 10               | 7  | 10 | 10   |   |
| 25%                       | 25.9         | 7.80 | 8.12 | 9.1         | 7.8  | 330                     | 10               | 8  | 10 | 10   |   |
| 50%                       | 25.9         | 7.71 | 8.05 | 9.1         | 8.2  | 372                     | 10               | 9  | 10 | 7  |   |
| 75%                       | 25.9         | 7.63 | 7.90 | 9.2         | 7.8  | 407                     | 10               | 10 | 8  | 8  |   |
| 100%                      | 25.9         | 7.58 | 7.99 | 9.2         | 8.0  | 439                     | 7                | 6  | 7  | 8  |   |
| Meter ID                  | 22A          | pH01 | pH01 | D013        | D013 | EC03                    |                  |    |    |  |   |
| Lab Water Control         | 26.0         | 8.13 | 7.76 | 8.3         | 7.7  | 298                     | 7                | 10 | 10 | 10   | Date: 9/28/09<br>Sample ID: 22774<br>Test Solution Prep: JPC<br>New WQ: BH<br>Renewal Time: 1330<br>Renewal Signoff: 2e<br>Old WQ: BH   |
| 12.5%                     | 26.0         | 8.03 | 7.97 | 8.4         | 7.0  | 321                     | 10               | 7  | 10 | 10   |   |
| 25%                       | 26.0         | 7.94 | 7.96 | 8.4         | 7.5  | 334                     | 9                | 8  | 10 | 10   |   |
| 50%                       | 26.0         | 7.82 | 7.46 | 8.6         | 7.5  | 369                     | 9                | 9  | 10 | 7  |   |
| 75%                       | 26.0         | 7.75 | 8.02 | 8.9         | 7.4  | 402                     | 8                | 9  | 7  | 7  |   |
| 100%                      | 26.0         | 7.65 | 8.16 | 9.2         | 7.1  | 440                     | 4                | 2  | 7  | 7  |   |
| Meter ID                  | 22A          | pH01 | pH14 | D014        | D012 | EC04                    |                  |    |    |  |   |
| Lab Water Control         | 25.5         | 7.99 |      | 7.5         | 309  | 7                       | 10               | 10 | 10 | Date: 9/29/09<br>Termination time: 1100<br>Termination Signoff: SK<br>Old WQ: YK |   |
| 12.5%                     | 25.5         | 7.95 |      | 7.5         | 324  | 10                      | 7                | 10 | 10 |  |   |
| 25%                       | 25.5         | 7.95 |      | 7.3         | 345  | 9                       | 8                | 10 | 9  |  |   |
| 50%                       | 25.5         | 8.02 |      | 7.3         | 380  | 9                       | 9                | 10 | 7  |  |   |
| 75%                       | 25.5         | 8.06 |      | 7.2         | 413  | 8                       | 8                | 7  | 7  |  |   |
| 100%                      | 25.5         | 8.11 |      | 7.0         | 450  | 3                       | 1                | 6  | 6  |  |   |
| Meter ID                  | 22A          | pH14 |      | D012        | EC04 |                         |                  |    |    |  |   |

## Fathead Minnow Dry Weight Data Sheet

Client: Precision Analytical - Chevron Cawelo Test ID #: 36403 Project # 15239  
 Sample: Pre-Poso Creek Tare Weight Date: 9/29/09 Sign-off: YAC  
 Test Date: 9/22/09 Final Weight Date: 10/7/09 Sign-off: DED

| Pan ID     | Concentration Replicate | Initial Pan Weight (mg) | Final Pan Weight (mg) | Initial # of Organisms | Biomass Value (mg) |
|------------|-------------------------|-------------------------|-----------------------|------------------------|--------------------|
| 1          | Lab Water A             | 177.39                  | 180.15                | 10                     | 0.276              |
| 2          | B                       | 172.96                  | 175.89                | 10                     | 0.293              |
| 3          | C                       | 170.56                  | 174.00                | 10                     | 0.434              |
| 4          | D                       | 181.38                  | 184.91                | 10                     | 0.353              |
| 5          | 12.5                    | 176.00                  | 179.07                | 10                     | 0.304              |
| 6          | B                       | 174.60                  | 177.57                | 8                      | 0.371              |
| 7          | C                       | 189.50                  | 192.95                | 10                     | 0.345              |
| 8          | D                       | 181.71                  | 185.10                | 10                     | 0.339              |
| 9          | 25                      | 167.72                  | 171.20                | 10                     | 0.348              |
| 10         | B                       | 175.46                  | 178.58                | 10                     | 0.312              |
| 11         | C                       | 172.66                  | 176.20                | 10                     | 0.354              |
| 12         | D                       | 187.91                  | 190.87                | 10                     | 0.246              |
| 13         | 50                      | 185.67                  | 187.94                | 10                     | 0.227              |
| 14         | B                       | 177.87                  | 180.64                | 10                     | 0.277              |
| 15         | C                       | 172.26                  | 174.95                | 10                     | 0.269              |
| 16         | D                       | 171.05                  | 173.75                | 10                     | 0.270              |
| 17         | 75                      | 173.83                  | 175.51                | 10                     | 0.168              |
| 18         | B                       | 181.81                  | 183.52                | 10                     | 0.171              |
| 19         | C                       | 174.29                  | 175.82                | 10                     | 0.153              |
| 20         | D                       | 159.30                  | 160.73                | 10                     | 0.143              |
| 21         | 100                     | 146.88                  | 147.10                | 10                     | 0.022              |
| 22         | B                       | 142.36                  | 142.36                | 10                     | 0.062              |
| 23         | C                       | 170.63                  | 171.82                | 10                     | 0.119              |
| 24         | D                       | 178.88                  | 179.87                | 10                     | 0.099              |
| QA 1       |                         | 179.97                  | 180.00                |                        |                    |
| QA 2       |                         | 147.37                  | 147.26                |                        |                    |
| Balance ID |                         | 1                       | 1                     |                        |                    |

## Appendix F

### Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Ceriodaphnia dubia*

## CETIS Summary Report

Report Date:

26 Oct-09 14:53 (p 1 of 2)

Test Code:

20-4854-3995/36322

| Ceriodaphnia Survival and Reproduction Test |                 |                                       |      |         |          |                  | Pacific EcoRisk                   |
|---|-----------------|---------------------------------------|------|---------|----------|------------------|-----------------------------------|
| Batch ID:                                   | 12-7185-1466    | Test Type: Reproduction-Survival (7d) |      |         | Analyst: | Drew Gantner     |                                   |
| Start Date:                                 | 22 Sep-09 18:00 | Protocol: EPA-821-R-02-013 (2002)     |      |         | Diluent: | Laboratory Water |                                   |
| Ending Date:                                | 28 Sep-09 16:20 | Species: Ceriodaphnia dubia           |      |         | Brine:   | Not Applicable   |                                   |
| Duration:                                   | 5d 22h          | Source: In-House Culture              |      |         | Age:     | 1                |                                   |
| Sample ID:                                  | 13-8686-0740    | Code: NaCl                            |      |         | Client:  | Pacific Ecorisk  |                                   |
| Sample Date:                                | 22 Sep-09 18:00 | Material: Sodium chloride             |      |         | Project: | 15220            |                                   |
| Receive Date:                               | 22 Sep-09 18:00 | Source: Reference Toxicant            |      |         |          |                  |                                   |
| Sample Age:                                 | N/A (25.6 °C)   | Station: In House                     |      |         |          |                  |                                   |
| Comparison Summary                          |                 |                                       |      |         |          |                  |                                   |
| Analysis ID                                 | Endpoint        | NOEL                                  | LOEL | TOEL    | PMSD     | TU               | Method                            |
| 10-3222-7684                                | Reproduction    | 500                                   | 1000 | 707     | 25.9%    |                  | Steel Many-One Rank Test          |
| 09-7485-3010                                | Survival        | 1500                                  | 2000 | 1730    | N/A      |                  | Fisher Exact/Bonferroni-Holm Test |
| Point Estimate Summary                      |                 |                                       |      |         |          |                  |                                   |
| Analysis ID                                 | Endpoint        | Level                                 | mg/L | 95% LCL | 95% UCL  | TU               | Method                            |
| 13-6558-7640                                | Reproduction    | IC5                                   | 70.4 | 2.12    | 544      |                  | Linear Interpolation (ICPIN)      |
|   |                 | IC10                                  | 529  | 8.71    | 607      |                  |                                   |
|   |                 | IC15                                  | 572  | 29.3    | 675      |                  |                                   |
|   |                 | IC20                                  | 619  | 93.4    | 754      |                  |                                   |
|   |                 | IC25                                  | 670  | 412     | 836      |                  |                                   |
|   |                 | IC40                                  | 848  | 657     | 1090     |                  |                                   |
|   |                 | IC50                                  | 993  | 820     | 1270     |                  |                                   |
| 16-7083-5348                                | Survival        | EC5                                   | 1510 | 637     | 1520     |                  | Linear Interpolation (ICPIN)      |
|   |                 | EC10                                  | 1540 | 812     | 1540     |                  |                                   |
|   |                 | EC15                                  | 1560 | 1500    | 1570     |                  |                                   |
|   |                 | EC20                                  | 1580 | 1530    | 1590     |                  |                                   |
|   |                 | EC25                                  | 1610 | 1550    | 1610     |                  |                                   |
|   |                 | EC40                                  | 1680 | 1640    | 1680     |                  |                                   |
|   |                 | EC50                                  | 1730 | 1690    | 1730     |                  |                                   |
| Reproduction Summary                        |                 |                                       |      |         |          |                  |                                   |
| Conc-mg/L                                   | Control Type    | Count                                 | Mean | 95% LCL | 95% UCL  | Min              | Max                               |
| 0   | Lab Water Contr | 10                                    | 22.4 | 19.8    | 25       | 12               | 32                                |
| 250   |                 | 10                                    | 20.6 | 17.8    | 23.4     | 10               | 31                                |
| 500   |                 | 10                                    | 21.3 | 19      | 23.6     | 8                | 28                                |
| 1000  |                 | 10                                    | 11.1 | 9.22    | 13       | 6                | 22                                |
| 1500  |                 | 10                                    | 7.6  | 6.87    | 8.33     | 5                | 12                                |
| 2000  |                 | 10                                    | 0    | 0       | 0        | 0                | 0                                 |
|   |                 |                                       |      |         |          |                  | 100.0%                            |
| Survival Summary                            |                 |                                       |      |         |          |                  |                                   |
| Conc-mg/L                                   | Control Type    | Count                                 | Mean | 95% LCL | 95% UCL  | Min              | Max                               |
| 0   | Lab Water Contr | 10                                    | 0.9  | 0.782   | 1        | 0                | 1                                 |
| 250   |                 | 10                                    | 1    | 1       | 1        | 1                | 1                                 |
| 500   |                 | 10                                    | 1    | 1       | 1        | 1                | 1                                 |
| 1000  |                 | 10                                    | 0.9  | 0.782   | 1        | 0                | 1                                 |
| 1500  |                 | 10                                    | 1    | 1       | 1        | 1                | 1                                 |
| 2000  |                 | 10                                    | 0    | 0       | 0        | 0                | 0                                 |
|   |                 |                                       |      |         |          |                  | 100.0%                            |

**CETIS Summary Report**

Report Date:

26 Oct-09 14:53 (p 2 of 2)

Test Code:

20-4854-3995/36322

**Ceriodaphnia Survival and Reproduction Test****Pacific EcoRisk****Reproduction Detail**

| Conc-mg/L | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
|-----------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0         | Lab Water Contr | 16    | 12    | 27    | 32    | 15    | 16    | 26    | 28    | 24    | 28     |
| 250       |                 | 10    | 29    | 27    | 31    | 14    | 17    | 25    | 11    | 21    | 21     |
| 500       |                 | 23    | 24    | 28    | 25    | 8     | 23    | 26    | 14    | 23    | 19     |
| 1000      |                 | 7     | 10    | 22    | 10    | 9     | 7     | 15    | 16    | 9     | 6      |
| 1500      |                 | 5     | 7     | 8     | 6     | 9     | 12    | 8     | 8     | 6     | 7      |
| 2000      |                 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      |

**Survival Detail**

| Conc-mg/L | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
|-----------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0         | Lab Water Contr | 1     | 1     | 1     | 1     | 1     | 0     | 1     | 1     | 1     | 1      |
| 250       |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1      |
| 500       |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1      |
| 1000      |                 | 0     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1      |
| 1500      |                 | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1      |
| 2000      |                 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      |

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: \_\_\_\_\_ Material: Sodium Chloride Test Date: 9. 11. 09

Project #: 15220 Reference Toxicant Test ID: 36322 Randomization: BOARD A

Control Water: Lab Water (80:20)

| Day               | pH   |      | D.O. |      | Cond.<br>( $\mu$ S/cm) | Temp<br>(°C)           | Survival / Reproduction |                                      |    |    |    |    |    | SIGN-OFF |                             |    |
|-------------------|------|------|------|------|------------------------|------------------------|-------------------------|--------------------------------------|----|----|----|----|----|----------|-----------------------------|----|
|                   | New  | Old  | New  | Old  |                        |                        | A                       | B                                    | C  | D  | E  | F  | G  | H        | I                           | J  |
| 0                 | 8.07 | 7.9  |      |      | 242                    | 25.6                   | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 0  |
| 1                 | 8.19 | 8.29 | 9.2  | 9.1  | 234                    | 25.8                   | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 0  |
| 2                 | 8.10 | 7.99 | 8.0  | 8.8  | 235                    | 25.7                   | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 0  |
| 3                 | 7.09 | 8.32 | 8.1  | 6.8  | 237                    | 25.8                   | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 0  |
| 4                 | 8.09 | 8.21 | 8.7  | 7.9  | 239                    | 25.9                   | 5                       | 5                                    | 4  | 7  | 5  | 5  | 5  | 6        | 5                           | 5  |
| 5                 | 7.95 | 8.17 | 8.3  | 8.9  | 244                    | 26.0                   | 0                       | 7                                    | 8  | 12 | 0  | 0  | 9  | 10       | 10                          | 10 |
| 6                 | 7.97 | 8.21 | 8.5  | 8.1  | 193                    | 26.0                   | 11                      | 13                                   | 10 | 13 | 12 | 12 | 9  | 13       | 13                          | 13 |
| 7                 |      |      |      |      |                        |                        |                         |                                      |    |    |    |    |    |          |                             |    |
| 8                 |      |      |      |      |                        |                        |                         |                                      |    |    |    |    |    |          |                             |    |
|                   |      |      |      |      |                        |                        |                         | Total= 16 12 27 32 15 16 26 28 24 28 |    |    |    |    |    |          | Mean Neonates/Female = 22.4 |    |
| Lab Water Control |      |      |      |      |                        |                        |                         |                                      |    |    |    |    |    |          |                             |    |
| Day               |      | pH   |      | D.O. |                        | Cond.<br>( $\mu$ S/cm) |                         | Survival / Reproduction              |    |    |    |    |    |          | RT BATCH NUMBER             |    |
| New               | Old  | New  | Old  | New  | Old                    | A                      | B                       | C                                    | D  | E  | F  | G  | H  | I        | J                           |    |
| 0                 | 8.06 |      |      | 7.8  |                        | 143                    | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 21 |
| 1                 | 8.13 | 8.26 | 9.4  | 9.0  | 745                    |                        | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 21 |
| 2                 | 8.08 | 8.07 | 7.9  | 8.1  | 700                    |                        | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 21 |
| 3                 | 8.11 | 8.26 | 8.1  | 7.0  | 693                    |                        | 0                       | 0                                    | 0  | 0  | 0  | 0  | 0  | 0        | 0                           | 21 |
| 4                 | 8.05 | 8.18 | 8.9  | 7.8  | 773                    |                        | 3                       | 6                                    | 6  | 6  | 5  | 7  | 5  | 4        | 5                           | 21 |
| 5                 | 7.95 | 8.15 | 8.2  | 8.2  | 738                    |                        | 0                       | 9                                    | 11 | 10 | 0  | 0  | 8  | 6        | 8                           | 21 |
| 6                 | 8.02 | 8.08 | 8.5  | 8.9  | 746                    |                        | 7                       | 14                                   | 10 | 15 | 9  | 10 | 12 | 0        | 8                           | 21 |
| 7                 |      |      |      |      |                        |                        |                         |                                      |    |    |    |    |    |          |                             |    |
| 8                 |      |      |      |      |                        |                        |                         |                                      |    |    |    |    |    |          |                             |    |
|                   |      |      |      |      |                        |                        |                         | Total= 10 26 27 31 14 17 25 11 21 21 |    |    |    |    |    |          | Mean Neonates/Female = 20.6 |    |
| 250 mg/L          |      |      |      |      |                        |                        |                         |                                      |    |    |    |    |    |          |                             |    |

**Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data**

| Client:    |           | Reference Toxicant |             | Material:      |                        | Sodium Chloride |                         | Test Date:                          |    | q. 14.04 |   |    |          |                                   |    |   |
|------------|-----------|--------------------|-------------|----------------|------------------------|-----------------|-------------------------|-------------------------------------|----|----------|---|----|----------|-----------------------------------|----|---|
| Project #: | 15220     | Test ID:           | 36322       | Randomization: | BOARD 44               | Control Water:  | Lab Water (80:20)       |                                     |    |          |   |    |          |                                   |    |   |
| Day        | pH<br>New | Old                | D.O.<br>New | Old            | Cond.<br>( $\mu$ S/cm) | Temp<br>(°C)    | Survival / Reproduction |                                     |    |          |   |    | SIGN-OFF |                                   |    |   |
|            |           |                    |             |                |                        |                 | A                       | B                                   | C  | D        | E | F  | G        | H                                 | I  | J |
| 0          | 6.02      |                    | 8.4         |                | 1215                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 1          | 8.06      | 8.27               | 9.7         | 8.2            | 1165                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 2          | 8.05      | 8.08               | 8.1         | 7.8            | 1182                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 3          | 8.10      | 8.24               | 8.2         | 7.3            | 1172                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 4          | 8.00      | 8.16               | 9.0         | 7.0            | 1212                   | 21.5            | 6                       | 5                                   | 6  | 0        | 5 | 4  | 5        | 5                                 | 3  |   |
| 5          | 7.99      | 9.10               | 8.2         | 9.5            | 1202                   | 21.5            | 7                       | 9                                   | 10 | 10       | 0 | 7  | 10       | 0                                 | 8  | 7 |
| 6          | 7.00      | 8.23               | 8.7         | 8.0            | 1139                   | 21.5            | 10                      | 10                                  | 13 | 9        | 8 | 11 | 12       | 9                                 | 10 | 9 |
| 7          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
| 8          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
|            |           |                    |             |                |                        |                 |                         | Total= 23 24 16 25 8 23 26 14 23 19 |    |          |   |    |          | Mean Neonates/Female = 21.3       |    |   |
|            |           |                    |             |                |                        |                 |                         | Survival / Reproduction             |    |          |   |    |          |                                   |    |   |
| Day        | pH<br>New | Old                | D.O.<br>New | Old            | Cond.<br>( $\mu$ S/cm) | Temp            | A                       | B                                   | C  | D        | E | F  | G        | H                                 | I  | J |
| 0          | 7.91      |                    | 6.7         |                | 2109                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 1          | 7.91      | 8.25               | 10.9        | 8.6            | 2115                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 2          | 7.99      | 8.06               | 8.4         | 7.6            | 2068                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 3          | 8.03      | 8.21               | 8.6         | 7.1            | 2094                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 4          | 7.80      | 8.12               | 9.4         | 7.6            | 2173                   | 21.5            | 5                       | 4                                   | 7  | 3        | 2 | 5  | 6        | 5                                 | 2  |   |
| 5          | 7.87      | 8.11               | 8.4         | 8.3            | 2079                   | 21.5            | 0                       | 7                                   | 0  | 0        | 0 | 4  | 4        | 4                                 |    |   |
| 6          | 7.01      | 8.19               | 9.2         | 9.6            | 2110                   | 21.5            | -                       | 4                                   | 5  | 7        | 2 | 9  | 7        | 0                                 | 0  |   |
| 7          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
| 8          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
|            |           |                    |             |                |                        |                 |                         | Total= 10 12 10 9 7 15 26 19 10     |    |          |   |    |          | Mean Neonates/Female = 14.1 ± 1.3 |    |   |
|            |           |                    |             |                |                        |                 |                         | Survival / Reproduction             |    |          |   |    |          |                                   |    |   |
| Day        | pH<br>New | Old                | D.O.<br>New | Old            | Cond.<br>( $\mu$ S/cm) | Temp            | A                       | B                                   | C  | D        | E | F  | G        | H                                 | I  | J |
| 0          | 7.91      |                    | 6.7         |                | 2109                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 1          | 7.91      | 8.25               | 10.9        | 8.6            | 2115                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 2          | 7.99      | 8.06               | 8.4         | 7.6            | 2068                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 3          | 8.03      | 8.21               | 8.6         | 7.1            | 2094                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 4          | 7.80      | 8.12               | 9.4         | 7.6            | 2173                   | 21.5            | 5                       | 4                                   | 7  | 3        | 2 | 5  | 6        | 5                                 | 2  |   |
| 5          | 7.87      | 8.11               | 8.4         | 8.3            | 2079                   | 21.5            | 0                       | 7                                   | 0  | 0        | 0 | 4  | 4        | 4                                 |    |   |
| 6          | 7.01      | 8.19               | 9.2         | 9.6            | 2110                   | 21.5            | -                       | 4                                   | 5  | 7        | 2 | 9  | 7        | 0                                 | 0  |   |
| 7          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
| 8          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
|            |           |                    |             |                |                        |                 |                         | Total= 10 12 10 9 7 15 26 19 10     |    |          |   |    |          | Mean Neonates/Female = 14.1 ± 1.3 |    |   |
|            |           |                    |             |                |                        |                 |                         | Survival / Reproduction             |    |          |   |    |          |                                   |    |   |
| Day        | pH<br>New | Old                | D.O.<br>New | Old            | Cond.<br>( $\mu$ S/cm) | Temp            | A                       | B                                   | C  | D        | E | F  | G        | H                                 | I  | J |
| 0          | 7.91      |                    | 6.7         |                | 2109                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 1          | 7.91      | 8.25               | 10.9        | 8.6            | 2115                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 2          | 7.99      | 8.06               | 8.4         | 7.6            | 2068                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 3          | 8.03      | 8.21               | 8.6         | 7.1            | 2094                   | 21.5            | 0                       | 0                                   | 0  | 0        | 0 | 0  | 0        | 0                                 | 0  | 0 |
| 4          | 7.80      | 8.12               | 9.4         | 7.6            | 2173                   | 21.5            | 5                       | 4                                   | 7  | 3        | 2 | 5  | 6        | 5                                 | 2  |   |
| 5          | 7.87      | 8.11               | 8.4         | 8.3            | 2079                   | 21.5            | 0                       | 7                                   | 0  | 0        | 0 | 4  | 4        | 4                                 |    |   |
| 6          | 7.01      | 8.19               | 9.2         | 9.6            | 2110                   | 21.5            | -                       | 4                                   | 5  | 7        | 2 | 9  | 7        | 0                                 | 0  |   |
| 7          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
| 8          |           |                    |             |                |                        |                 |                         |                                     |    |          |   |    |          |                                   |    |   |
|            |           |                    |             |                |                        |                 |                         | Total= 10 12 10 9 7 15 26 19 10     |    |          |   |    |          | Mean Neonates/Female = 14.1 ± 1.3 |    |   |

**Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data**

Client: \_\_\_\_\_ Reference Toxicant: \_\_\_\_\_ Material: \_\_\_\_\_ Sodium Chloride Test Date: \_\_\_\_\_ 9. 1. 1. 0. 9  
 Project #: 15220 Test ID: 36322 Randomization: boxes 44 Control Water: \_\_\_\_\_ Lab Water (80:20)

|           | Day  | pH   |      | D.O. |      | Cond.<br>( $\mu$ S/cm) | Temp<br>(°C) | Survival / Reproduction |   |   |   |   |   |    | SIGN-OFF |   |                            |
|-----------|------|------|------|------|------|------------------------|--------------|-------------------------|---|---|---|---|---|----|----------|---|----------------------------|
|           |      | New  | Old  | New  | Old  |                        |              | A                       | B | C | D | E | F | G  | H        |   |                            |
|           | 0    | 7.76 | -    | 9.0  | 7.0  | 3040                   | 20           | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 1         | 7.83 | 8.23 | 11.0 | 8.5  | 2110 | 0                      | 0            | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 2         | 7.89 | 8.04 | 8.6  | 7.5  | 2992 | 0                      | 0            | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 3         | 7.94 | 8.19 | 8.8  | 6.0  | 2788 | 0                      | 0            | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 4         | 7.78 | 8.12 | 9.8  | 7.9  | 3040 | 0                      | 0            | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 5         | 7.74 | 8.11 | 9.0  | 8.6  | 3030 | 0                      | 0            | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 6         | 7.80 | 8.20 | 9.9  | 8.5  | 3000 | 0                      | 0            | 0                       | 0 | 0 | 0 | 0 | 0 | 0  | 0        |   |                            |
| 7         |      |      |      |      |      |                        |              |                         |   |   |   |   |   |    |          |   |                            |
| 8         |      |      |      |      |      |                        |              |                         |   |   |   |   |   |    |          |   |                            |
|           |      |      |      |      |      |                        |              | Total=                  | 5 | 7 | 8 | 6 | 9 | 12 | 6        | 7 | Mean Neonates/Female = 7.6 |
| 1500 mg/L |      |      |      |      |      |                        |              |                         |   |   |   |   |   |    |          |   |                            |
| 2000 mg/L |      |      |      |      |      |                        |              |                         |   |   |   |   |   |    |          |   |                            |

## **Appendix G**

### **Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Fathead Minnows**

D/J>

## CETIS Summary Report

Report Date: 26 Oct-09 16:23 (p 1 of 2)  
 Test Code: 06-7053-2309/36323

| Chronic Larval Fish Survival and Growth Test |                     |                                   |                    |         |         |                                    | Pacific EcoRisk            |         |         |        |        |
|--|---------------------|-----------------------------------|--------------------|---------|---------|------------------------------------|----------------------------|---------|---------|--------|--------|
| Batch ID:                                    | 07-4776-9886        | Test Type: Growth-Survival (7d)   |                    |         |         | Analyst:                           | Drew Gantner               |         |         |        |        |
| Start Date:                                  | 22 Sep-09 18:55     | Protocol: EPA-821-R-02-013 (2002) |                    |         |         | Diluent:                           | Laboratory Water           |         |         |        |        |
| Ending Date:                                 | 29 Sep-09 08:50     | Species: Pimephales promelas      |                    |         |         | Brine:                             | Not Applicable             |         |         |        |        |
| Duration:                                    | 6d 14h              | Source: Enviro Sciences, Inc.     |                    |         |         | Age:                               | 1                          |         |         |        |        |
| Sample ID:                                   | 08-8210-7461        | Code:                             | NaCl               |         |         |                                    | Client: Reference Toxicant |         |         |        |        |
| Sample Date:                                 | 22 Sep-09 18:55     | Material:                         | Sodium chloride    |         |         |                                    | Project: 15221             |         |         |        |        |
| Receive Date:                                | 22 Sep-09 18:55     | Source:                           | Reference Toxicant |         |         |                                    |                            |         |         |        |        |
| Sample Age:                                  | N/A (25.7 °C)       | Station:                          | In House           |         |         |                                    |                            |         |         |        |        |
| <b>Comparison Summary</b>                    |                     |                                   |                    |         |         |                                    |                            |         |         |        |        |
| Analysis ID                                  | Endpoint            | NOEL                              | LOEL               | TOEL    | PMSD    | TU                                 | Method                     |         |         |        |        |
| 20-4381-2651                                 | 7d Survival Rate    | 3                                 | 6                  | 4.24    | 46.0%   | Dunnett's Multiple Comparison Test |                            |         |         |        |        |
| 18-7708-3967                                 | Mean Dry Biomass-mg | 1.5                               | 3                  | 2.12    | 22.0%   | Dunnett's Multiple Comparison Test |                            |         |         |        |        |
| 18-3392-2764                                 | Mean Dry Weight-mg  | 6                                 | >6                 | N/A     | 57.6%   | Bonferroni Adj t Test              |                            |         |         |        |        |
| <b>Point Estimate Summary</b>                |                     |                                   |                    |         |         |                                    |                            |         |         |        |        |
| Analysis ID                                  | Endpoint            | Level                             | g/L                | 95% LCL | 95% UCL | TU                                 | Method                     |         |         |        |        |
| 11-0850-3106                                 | 7d Survival Rate    | EC5                               | 2.46               | 1.35    | 3.22    | Linear Regression (MLE)            |                            |         |         |        |        |
|  |                     | EC10                              | 2.79               | 1.67    | 3.54    |                                    |                            |         |         |        |        |
|  |                     | EC15                              | 3.04               | 1.92    | 3.78    |                                    |                            |         |         |        |        |
|  |                     | EC20                              | 3.26               | 2.14    | 3.98    |                                    |                            |         |         |        |        |
|  |                     | EC25                              | 3.45               | 2.35    | 4.17    |                                    |                            |         |         |        |        |
|  |                     | EC40                              | 3.99               | 2.96    | 4.7     |                                    |                            |         |         |        |        |
|  |                     | EC50                              | 4.36               | 3.39    | 5.08    |                                    |                            |         |         |        |        |
| 00-6217-7498                                 | Mean Dry Biomass-mg | IC5                               | 1.66               | 1.45    | 1.74    | Linear Interpolation (ICPIN)       |                            |         |         |        |        |
|  |                     | IC10                              | 1.83               | 1.63    | 2.01    |                                    |                            |         |         |        |        |
|  |                     | IC15                              | 2.02               | 1.8     | 2.32    |                                    |                            |         |         |        |        |
|  |                     | IC20                              | 2.21               | 1.95    | 2.65    |                                    |                            |         |         |        |        |
|  |                     | IC25                              | 2.42               | 2.08    | 3       |                                    |                            |         |         |        |        |
|  |                     | IC40                              | 3.15               | 2.49    | 4.03    |                                    |                            |         |         |        |        |
|  |                     | IC50                              | 3.83               | 2.94    | 5.33    |                                    |                            |         |         |        |        |
| 04-1898-8948                                 | Mean Dry Weight-mg  | IC5                               | 2.52               | N/A     | N/A     | Linear Interpolation (ICPIN)       |                            |         |         |        |        |
|  |                     | IC10                              | >6                 | N/A     | N/A     |                                    |                            |         |         |        |        |
|  |                     | IC15                              | >6                 | N/A     | N/A     |                                    |                            |         |         |        |        |
|  |                     | IC20                              | >6                 | N/A     | N/A     |                                    |                            |         |         |        |        |
|  |                     | IC25                              | >6                 | N/A     | N/A     |                                    |                            |         |         |        |        |
|  |                     | IC40                              | >6                 | N/A     | N/A     |                                    |                            |         |         |        |        |
|  |                     | IC50                              | >6                 | N/A     | N/A     |                                    |                            |         |         |        |        |
| <b>7d Survival Rate Summary</b>              |                     |                                   |                    |         |         |                                    |                            |         |         |        |        |
| Conc-g/L                                     | Control Type        | Count                             | Mean               | 95% LCL | 95% UCL | Min                                | Max                        | Std Err | Std Dev | CV%    | Diff%  |
| 0  | Lab Water Contr     | 4                                 | 0.75               | 0.685   | 0.815   | 0.5                                | 0.9                        | 0.0316  | 0.173   | 23.1%  | 0.0%   |
| 0.75   |                     | 4                                 | 0.825              | 0.806   | 0.844   | 0.8                                | 0.9                        | 0.00913 | 0.05    | 6.06%  | -10.0% |
| 1.5  |                     | 4                                 | 0.8                | 0.694   | 0.906   | 0.4                                | 1                          | 0.0516  | 0.283   | 35.4%  | -6.67% |
| 3  |                     | 4                                 | 0.65               | 0.572   | 0.728   | 0.4                                | 0.9                        | 0.038   | 0.208   | 32.0%  | 13.3%  |
| 6  |                     | 4                                 | 0.175              | 0.128   | 0.222   | 0                                  | 0.3                        | 0.023   | 0.126   | 71.9%  | 76.7%  |
| 9  |                     | 4                                 | 0                  | 0       | 0       | 0                                  | 0                          | 0       | 0       | 100.0% |        |
| <b>Mean Dry Biomass-mg Summary</b>           |                     |                                   |                    |         |         |                                    |                            |         |         |        |        |
| Conc-g/L                                     | Control Type        | Count                             | Mean               | 95% LCL | 95% UCL | Min                                | Max                        | Std Err | Std Dev | CV%    | Diff%  |
| 0  | Lab Water Contr     | 4                                 | 0.252              | 0.241   | 0.264   | 0.222                              | 0.294                      | 0.00551 | 0.0302  | 12.0%  | 0.0%   |
| 0.75   |                     | 4                                 | 0.282              | 0.277   | 0.287   | 0.269                              | 0.296                      | 0.0023  | 0.0126  | 4.48%  | -11.8% |
| 1.5  |                     | 4                                 | 0.283              | 0.274   | 0.292   | 0.248                              | 0.298                      | 0.0043  | 0.0236  | 8.33%  | -12.2% |
| 3  |                     | 4                                 | 0.17               | 0.159   | 0.181   | 0.138                              | 0.206                      | 0.00514 | 0.0282  | 16.6%  | 32.6%  |
| 6  |                     | 4                                 | 0.07               | 0.0491  | 0.0909  | 0                                  | 0.128                      | 0.0102  | 0.056   | 79.9%  | 72.2%  |
| 9  |                     | 4                                 | 0                  | 0       | 0       | 0                                  | 0                          | 0       | 0       | 100.0% |        |

## Chronic Larval Fish Survival and Growth Test

Pacific EcoRisk

## Mean Dry Weight-mg Summary

| Conc-g/L | Control Type    | Count | Mean  | 95% LCL | 95% UCL | Min   | Max   | Std Err | Std Dev | CV%   | Diff%  |
|----------|-----------------|-------|-------|---------|---------|-------|-------|---------|---------|-------|--------|
| 0        | Lab Water Contr | 4     | 0.352 | 0.315   | 0.389   | 0.278 | 0.498 | 0.0182  | 0.0995  | 28.3% | 0.0%   |
| 0.75     |                 | 4     | 0.342 | 0.335   | 0.35    | 0.321 | 0.37  | 0.00373 | 0.0204  | 5.97% | 2.65%  |
| 1.5      |                 | 4     | 0.395 | 0.337   | 0.452   | 0.29  | 0.62  | 0.0282  | 0.155   | 39.2% | -12.1% |
| 3        |                 | 4     | 0.28  | 0.246   | 0.315   | 0.197 | 0.408 | 0.0169  | 0.0927  | 33.1% | 20.3%  |
| 6        |                 | 3     | 0.396 | 0.351   | 0.44    | 0.265 | 0.495 | 0.0216  | 0.118   | 29.9% | -12.4% |

## 7d Survival Rate Detail

| Conc-g/L | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|----------|-----------------|-------|-------|-------|-------|
| 0        | Lab Water Contr | 0.8   | 0.5   | 0.9   | 0.8   |
| 0.75     |                 | 0.9   | 0.8   | 0.8   | 0.8   |
| 1.5      |                 | 0.8   | 1     | 1     | 0.4   |
| 3        |                 | 0.6   | 0.7   | 0.9   | 0.4   |
| 6        |                 | 0.2   | 0     | 0.2   | 0.3   |
| 9        |                 | 0     | 0     | 0     | 0     |

## Mean Dry Biomass-mg Detail

| Conc-g/L | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|----------|-----------------|-------|-------|-------|-------|
| 0        | Lab Water Contr | 0.244 | 0.249 | 0.294 | 0.222 |
| 0.75     |                 | 0.289 | 0.274 | 0.269 | 0.296 |
| 1.5      |                 | 0.296 | 0.29  | 0.298 | 0.248 |
| 3        |                 | 0.173 | 0.138 | 0.206 | 0.163 |
| 6        |                 | 0.053 | 0     | 0.099 | 0.128 |
| 9        |                 | 0     | 0     | 0     | 0     |

## Mean Dry Weight-mg Detail

| Conc-g/L | Control Type    | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|----------|-----------------|-------|-------|-------|-------|
| 0        | Lab Water Contr | 0.305 | 0.498 | 0.327 | 0.278 |
| 0.75     |                 | 0.321 | 0.342 | 0.336 | 0.37  |
| 1.5      |                 | 0.37  | 0.29  | 0.298 | 0.62  |
| 3        |                 | 0.288 | 0.197 | 0.229 | 0.408 |
| 6        |                 | 0.265 | 0.495 | 0.427 |       |

## 7 Day Chronic Fathead Minnow Reference Toxicant Test Data

Client: Reference Toxicant Organism Log#: 4783 Age: <48  
 Test Material: Sodium Chloride Organism Supplier: ABS  
 Test ID#: 36323 Project #: 15221 Control/Diluent: EPAMH  
 Test Date: 5/22/09 Randomization: 4602 Control Water Batch: 1244

| Treatment<br>(g/L) | Temp<br>(°C) | pH   |      | D.O. (mg/L) |      | Conductivity<br>(µs/cm) | # Live Organisms |    |    |    | SIGN-OFF                       |
|--------------------|--------------|------|------|-------------|------|-------------------------|------------------|----|----|----|--------------------------------|
|                    |              | New  | Old  | New         | Old  |                         | A                | B  | C  | D  |                                |
| Control            | 25.7         | 8.64 |      | 8.7         |      | 316                     | 10               | 10 | 10 | 10 | Date: <u>9/22/09</u>           |
| 0.75               | 25.7         | 8.41 |      | 8.4         |      | 1812                    | 10               | 10 | 10 | 10 | Test Solution Prep: <u>KO</u>  |
| 1.5                | 25.7         | 8.31 |      | 9.2         |      | 3180                    | 10               | 10 | 10 | 10 | New WQ: <u>MJM</u>             |
| 3                  | 25.7         | 8.24 |      | 9.1         |      | 5990                    | 10               | 10 | 10 | 10 | Initiation Time: <u>1855</u>   |
| 6                  | 25.7         | 8.17 |      | 9.5         |      | 10960                   | 10               | 10 | 10 | 10 | Initiation Signoff: <u>KO</u>  |
| 9                  | 25.7         | 8.11 |      | 9.9         |      | 15420                   | 10               | 10 | 10 | 10 | RT Stock Batch #: <u>29</u>    |
| Meter ID           | 22A          | pH11 |      | pH12        |      | Eco4                    |                  |    |    |    |                                |
| Control            | 25.8         | 7.90 | 8.46 | 10.0        | 8.9  | 369                     | 9                | 9  | 9  | 9  | Date: <u>9.23.09</u>           |
| 0.75               | 25.8         | 7.97 | 8.26 | 9.6         | 8.5  | 1950                    | 10               | 10 | 9  | 10 | Test Solution Prep: <u>EBC</u> |
| 1.5                | 25.8         | 8.07 | 8.18 | 9.5         | 8.4  | 3300                    | 10               | 10 | 10 | 10 | New WQ: <u>JK</u>              |
| 3                  | 25.8         | 8.08 | 8.10 | 9.6         | 8.4  | 5940                    | 10               | 10 | 10 | 10 | Renewal Time: <u>1000</u>      |
| 6                  | 25.8         | 8.04 | 8.02 | 9.8         | 8.3  | 10880                   | 10               | 9  | 8  | 10 | Renewal Signoff: <u>JPC</u>    |
| 9                  | 25.8         | 7.99 | 7.99 | 10.4        | 8.4  | 15730                   | 0                | 0  | 0  | 0  | Old WQ: <u>JKM</u>             |
| Meter ID           | 22A          | pH11 | pH11 | pH13        | pH13 | Eco4                    |                  |    |    |    | RT Stock Batch #: <u>29</u>    |
| Control            | 25.7         | 7.99 | 8.07 | 8.8         | 7.7  | 362                     | 8                | 7  | 9  | 8  | Date: <u>9/24/09</u>           |
| 0.75               | 25.7         | 8.09 | 8.01 | 8.7         | 7.7  | 1805                    | 9                | 10 | 9  | 10 | Test Solution Prep: <u>JK</u>  |
| 1.5                | 25.7         | 8.08 | 8.00 | 8.9         | 7.6  | 3170                    | 10               | 10 | 10 | 7  | New WQ: <u>MJM</u>             |
| 3                  | 25.7         | 8.05 | 7.97 | 9.1         | 7.7  | 5860                    | 10               | 10 | 10 | 10 | Renewal Time: <u>1120</u>      |
| 6                  | 25.7         | 7.97 | 7.90 | 9.8         | 7.8  | 10970                   | 8                | 4  | 4  | 7  | Renewal Signoff: <u>JK</u>     |
| 9                  | -            | -    | -    | -           | -    | -                       | -                | -  | -  | -  | Old WQ: <u>MJM</u>             |
| Meter ID           | 22A          | pH11 | pH11 | pH12        | pH12 | Eco4                    |                  |    |    |    | RT Stock Batch #: <u>29</u>    |
| Control            | 25.8         | 7.99 | 7.78 | 9.4         | 7.3  | 355                     | 8                | 5  | 9  | 8  | Date: <u>9/25/09</u>           |
| 0.75               | 25.8         | 8.04 | 7.87 | 8.4         | 7.2  | 1837                    | 9                | 10 | 9  | 9  | Test Solution Prep: <u>JK</u>  |
| 1.5                | 25.8         | 8.09 | 7.85 | 8.4         | 7.2  | 3170                    | 8                | 10 | 10 | 7  | New WQ: <u>MJM</u>             |
| 3                  | 25.8         | 8.07 | 7.83 | 8.4         | 7.2  | 5880                    | 9                | 10 | 10 | 8  | Renewal Time: <u>1530</u>      |
| 6                  | 25.8         | 8.01 | 7.75 | 8.3         | 7.2  | 10820                   | 6                | 1  | 4  | 7  | Renewal Signoff: <u>JPC</u>    |
| 9                  | -            | -    | -    | -           | -    | -                       | -                | -  | -  | -  | Old WQ: <u>MJM</u>             |
| Meter ID           | 22A          | pH11 | pH13 | pH13        | pH13 | Eco4                    |                  |    |    |    | RT Stock Batch #: <u>30</u>    |

## 7 Day Chronic Fathead Minnow Reference Toxicant Test Data

Client: Reference Toxicant Organism Log#: 4783 Age: <48 hrs  
 Test Material: Sodium Chloride Organism Supplier: ABIS  
 Test ID#: 36323 Project #: 15221 Control/Diluent: EPAMH  
 Test Date: 9/22/09 Randomization: 4.6.2 Control Water Batch: 1244

| Treatment<br>(g/L) | Temp<br>(°C) | pH         |      | D.O. (mg/L) |      | Conductivity<br>(µS/cm) | # Live Organisms |            |            |                    | SIGN-OFF                          |
|--------------------|--------------|------------|------|-------------|------|-------------------------|------------------|------------|------------|--------------------|-----------------------------------|
|                    |              | new        | old  | new         | old  |                         | A                | B          | C          | D                  |                                   |
| Control            | 26.0         | 8.11       | 7.83 | 9.0         | 7.2  | 349                     | 8                | 5          | 9          | 8                  | Date: <u>9/26/09</u>              |
| 0.75               | 26.0         | 8.14       | 7.82 | 9.1         | 7.4  | 2220                    | 9                | 10         | 9          | 9                  | Test Solution Prep: <u>8mL</u>    |
| 1.5                | 26.0         | 8.11       | 7.77 | 9.2         | 7.1  | 3031                    | 8                | 10         | 10         | 7                  | New WQ: <u>el.</u>                |
| 3                  | 26.0         | 8.05       | 7.80 | 9.1         | 7.3  | 6005                    | 9                | 10         | 9          | 7                  | Renewal Time: <u>1400</u>         |
| 6                  | 26.0         | 7.97       | 7.70 | 9.3         | 7.4  | 10,093                  | 2                | 0          | 2          | 3                  | Renewal Signoff: <u>JPC</u>       |
| 9                  | -            | -          | -    | -           | -    | -                       | -                | -          | -          | Old WQ: <u>el.</u> |                                   |
| Meter ID           | 22A          | pH03       | pH07 | DO13        | DO13 | EC03                    | [REDACTED]       | [REDACTED] | [REDACTED] | [REDACTED]         | RT Stock Batch #: <u>30</u>       |
| Control            | 25.9         | 7.97       | 9.25 | 8.7         | 8.1  | 335                     | 8                | 5          | 9          | 8                  | Date: <u>9/27/09</u>              |
| 0.75               | 25.9         | 7.94       | 8.14 | 8.6         | 8.0  | 1927                    | 9                | 10         | 8          | 9                  | Test Solution Prep: <u>8mL</u>    |
| 1.5                | 25.9         | 7.97       | 9.01 | 8.5         | 8.1  | 3210                    | 8                | 10         | 10         | 5                  | New WQ: <u>80</u>                 |
| 3                  | 25.9         | 7.98       | 7.95 | 8.5         | 8.4  | 5820                    | 9                | 9          | 9          | 6                  | Renewal Time: <u>0950</u>         |
| 6                  | 25.9         | 7.93       | 7.85 | 8.6         | 8.2  | 10990                   | 2                | -          | 2          | 3                  | Renewal Signoff: <u>80</u>        |
| 9                  | -            | -          | -    | -           | -    | -                       | -                | -          | -          | Old WQ: <u>80</u>  |                                   |
| Meter ID           | 22A          | pH03       | pH09 | DO14        | DO13 | EC05                    | [REDACTED]       | [REDACTED] | [REDACTED] | [REDACTED]         | RT Stock Batch #: <u>30</u>       |
| Control            | 26.0         | 8.08       | 7.91 | 8.4         | 7.9  | 298                     | 8                | 5          | 9          | 8                  | Date: <u>9/28/09</u>              |
| 0.75               | 26.0         | 8.07       | 7.96 | 8.2         | 7.9  | 1998                    | 9                | 8          | 8          | 9                  | Test Solution Prep: <u>8mL</u>    |
| 1.5                | 26.0         | 8.08       | 7.91 | 8.3         | 7.9  | 3380                    | 8                | 10         | 10         | 5                  | New WQ: <u>80</u>                 |
| 3                  | 26.0         | 8.06       | 7.85 | 8.6         | 8.0  | 5810                    | 8                | 9          | 9          | 6                  | Renewal Time: <u>1100</u>         |
| 6                  | 26.0         | 8.02       | 7.87 | 8.9         | 7.9  | 10870                   | 2                | -          | 2          | 3                  | Renewal Signoff: <u>80</u>        |
| 9                  | -            | -          | -    | -           | -    | -                       | -                | -          | -          | Old WQ: <u>80</u>  |                                   |
| Meter ID           | 22A          | pH09       | pH14 | DO14        | DO12 | EC04                    | [REDACTED]       | [REDACTED] | [REDACTED] | [REDACTED]         | RT Stock Batch #: <u>30</u>       |
| Control            | 25.3         | [REDACTED] | 8.50 | [REDACTED]  | 7.9  | 3205                    | 8                | 5          | 9          | 8                  | Date: <u>9/29/09</u>              |
| 0.75               | 25.3         | [REDACTED] | 8.27 | [REDACTED]  | 7.7  | 2064                    | 9                | 8          | 8          | 8                  | Termination Time: <u>10/08/09</u> |
| 1.5                | 25.3         | [REDACTED] | 8.16 | [REDACTED]  | 7.6  | 3440                    | 8                | 10         | 10         | 4                  | Termination Signoff: <u>JK</u>    |
| 3                  | 25.3         | [REDACTED] | 8.08 | [REDACTED]  | 7.6  | 5930                    | 6                | 7          | 9          | 4                  | Old WQ: <u>4mL</u>                |
| 6                  | 25.3         | [REDACTED] | 7.99 | [REDACTED]  | 7.4  | 11240                   | 2                | -          | 2          | 3                  |                                   |
| 9                  | -            | [REDACTED] | -    | [REDACTED]  | -    | -                       | -                | -          | -          |                    |                                   |
| Meter ID           | 22A          | [REDACTED] | 8h14 | [REDACTED]  | DO12 | EC04                    | [REDACTED]       | [REDACTED] | [REDACTED] | [REDACTED]         |                                   |

## Fathead Minnow Dry Weight Data Sheet

Client: Reference Toxicant Test ID #: 36323 Project # 15221  
 Sample: Sodium Chloride Tare Weight Date: 9/24/09 Sign-off: LM  
 Test Date: 9/28/09 Final Weight Date: 10/1/09 Sign-off: LM

| Pan ID      | Concentration<br>Replicate | Initial Pan Weight<br>(mg) | Final Pan Weight<br>(mg) | Initial # of Organisms | Biomass Value (mg) |
|-------------|----------------------------|----------------------------|--------------------------|------------------------|--------------------|
| 1           | Control A                  | 149.33                     | 151.77                   | 10                     | 0.244              |
| 2           | B                          | 163.14                     | 165.68                   | 10                     | 0.249              |
| 3           | C                          | 165.69                     | 168.63                   | 10                     | 0.294              |
| 4           | D                          | 155.64                     | 157.86                   | 10                     | 0.220              |
| 5           | 0.75 A                     | 180.03                     | 182.92                   | 10                     | 0.289              |
| 6           | B                          | 139.38                     | 142.12                   | 10                     | 0.274              |
| 7           | C                          | 145.09                     | 147.78                   | 10                     | 0.269              |
| 8           | D                          | 177.21                     | 180.17                   | 10                     | 0.296              |
| 9           | 1.5 A                      | 179.58                     | 182.54                   | 10                     | 0.296              |
| 10          | B                          | 145.33                     | 148.23                   | 10                     | 0.290              |
| 11          | C                          | 151.68                     | 154.66                   | 10                     | 0.298              |
| 12          | D                          | 166.40                     | 168.88                   | 10                     | 0.248              |
| 13          | 3 A                        | 170.43                     | 172.16                   | 10                     | 0.173              |
| 14          | B                          | 148.92                     | 150.30                   | 10                     | 0.138              |
| 15          | C                          | 171.84                     | 173.90                   | 10                     | 0.206              |
| 16          | D                          | 176.84                     | 178.47                   | 10                     | 0.163              |
| 17          | 6 A                        | 163.35                     | 163.88                   | 10                     | 0.053              |
| 18          | B                          | 162.05                     | —                        | 10                     | 0.000              |
| 19          | C                          | 161.60                     | 161.99                   | 10                     | 0.099              |
| 20          | D                          | 162.86                     | 164.14                   | 10                     | 0.128              |
| 21          | 9 A                        | 151.46                     | —                        | 10                     | 0.006              |
| 22          | B                          | 169.29                     | —                        | 10                     | 0.000              |
| 23          | C                          | 169.75                     | —                        | 10                     | 0.000              |
| 24          | D                          | 171.56                     | —                        | 10                     | 0.000              |
| QA1         |                            | 166.73                     | 166.77                   |                        | 0.040              |
| QA2         |                            | 178.25                     | 178.30                   |                        | 0.050              |
| QA3         |                            | 164.09                     | 164.26                   |                        | 0.170              |
| Balance ID: |                            | 1                          | 1                        |                        |                    |